Vol 6 No 12

December $3.50*

The Australian COMMODORE and AMIGA REVIEW

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The Australian COMMODORE and Amiga Review

VOL. 6 NO. 12 December 1989

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Editorial

AROUND THIS TIME of year, the competition to catch the consumer's imagination reaches new heights of intensity. At the same time, a number of unscrupulous operators find sales are more than booming. Out there, in the second hand computer columns, are people blatantly advertising the sale of pirated software.

Unsuspecting buyers, and a fair number of suspecting ones too, are purchasing from these diskmongers. This practice is illegal and immoral. These get rich quick pirates are stealing from the pockets of software companies and program designers.

Would you knowingly support a person selling stolen cars, or hi-fi? Would you buy a stolen computer? Pirated software is no different. Yet, I still hear time and time again the most ludicrous argument that pirating is all right because software is so expensive. Well, next time I pass a Porsche I might just jump in and take it - after all, they're way over-priced, aren't they?

Sure, there's the occasional example of overcharging. But a smart buyer will find by shopping around that software in Australia has reached very reasonable pricing levels. There may be the odd exceptions. However, they in no way justify the scale of piracy which continues to this day and the blackest form of which is the sale of pirated disks.

Do you really expect the small industry which exists in Australia to survive forever if its very life blood is constantly sapped by these sorts of traders? What about dealers who spice up a deal by throwing in free copies of pirated software? It's up to us, as consumers, to say no to piracy.

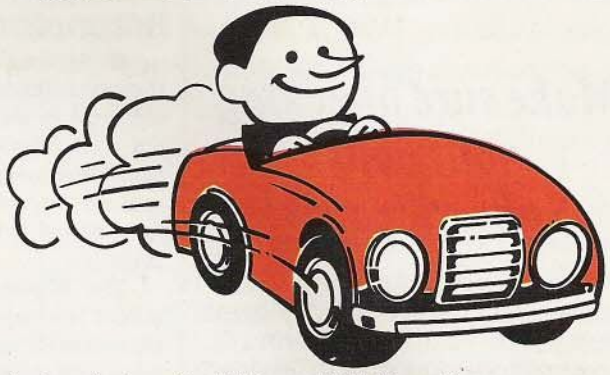
Advertising pays part of the bill to produce this very magazine. If the local companies don't survive, neither will the quality of this magazine.

Well, enjoy your holiday break. Take care on the roads - if you have to drive fast do it in *Test Drive II*!

Andrew Farrell

Cover picture: Super VHS is amazingly superior in quality to standard VHS. With 400 horizontal lines of resolution, and super crisp colours the improvements are immediately obvious, even on a standard colour television. We tested out the JVC HR-S5000EA player and GR-S77 camera together with the Neriki Desktop Genlock. See the article in this issue on Genlocks. JVC's local distributor, Hagemeyer, lent us the above equipment.

The Disk Drive that won't drive you up the wall



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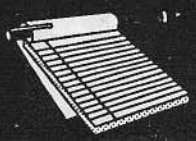
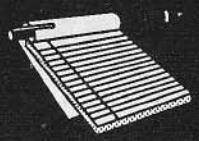
C64ers





New products - Britannica Software

● Although trying hard to expand their educational image to include entertainment in the United States, Britannica Software titles are only just starting to appear downunder. Computermate Products are importing some of the better titles, all of which retail at reasonable prices.

The Algebra series is ideal for high school students. Starting with the basics of numeral, number lines, number systems and evaluating expressions the series takes you all the way to irrational numbers, radicals, square roots and quadratic equations. Sound like a mouthfull? Perhaps you'd better brush up.

States and Traits is an active geography program especially for those hoping to tour the U.S. A game of trivia, history, geography and and current facts.

There's a whole bunch of other titles - for more information call (02) 457 8118 or ask your local Commodore dealer.

More from BASIC 8.0

● Fans of the C128 will be happy to know that Basic 8.0 is now even easier to get into. A new book on *How to Get the Most Out of BASIC 8* has been released. It's written by the guys who wrote the language. There's two disks included with plenty of examples. Topics such as graphics 3D solids, user input and utilities are covered. BASIC 8.0 and 80 column monitor, and a 128 with 64K of video RAM are required.

Free Spirit supplied our review copy. Briwall and Computermate both distribute their products locally. Try (062) 880131 or (02) 457 8118 respectively.

Fontmaster 128 Update

● My favorite 128 word processor has been updated recently to Version 1.4 and now includes a new format command known as "lk". This allows for a number of text files on a disk to be linked together for unattended printing. Previous versions had a "chain" command but as each new file was loaded from disk the "Load fonts and sets?" requester came up and you had to be there to answer it and so get the next file printing. No problems now, just use "lk" and go do something else whilst your work prints out.

There's an improved printer driver which will make Okimate 20 owners happy. The driver now handles 24 bit graphics which means that this printer will now print the fonts OK. The "user codes" for printing in ordinary dot matrix mode have been updated to work properly too.

Specialized codes may be entered by using the Setup Customizer to access features specific to your type of printer (such as changing color etc). Previous versions had a slight problem in handling the characters () , . ' " / ; : as they tended to be used as "breakpoints" when word wrapping. This has now been overcome and word wrap works beautifully.

There's a new utility on the *Spellmaster v1.4* disk called "Edit User" which is used to edit unwanted words from your user dictionary. It's very easy to use, just boot it and follow the prompts.

Fontmaster 128 may now be loaded and run from any drive/device number. For instance, to boot from device 9 simply put the disk in that drive and type BOOT U9.

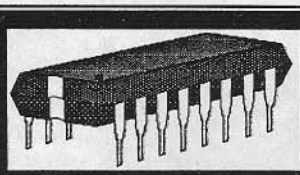
I've never had too many problems in using *Fontmaster 128* anyway (other than the requester mentioned above) and in my opinion what these update refinements really do is enhance one of the finest programs available for any of the Commodore computers.

Finally, if you have a Star NX24-10 and can't get a decent font printout with *Fontmaster 128*, try the NEC P256 driver (which uses 16 of the pins). I wrote to Xetec about the NX24-10 and that's what they suggested. ❑

If you find out where, let everyone else know

Fontmaster 128

Ram Rumbles



Key people join Commodore USA

● Australia's Commodore branch is not the only office to receive a new burst of life. Harry Copperman, recently appointed CEO, has appointed a number of new personal to key management positions. The names weren't plucked out of CES hat either - they include people with a serious background within the American industry. Let's hope the professional expertise they bring will further help the Amiga gain new ground as a serious computer.

Spot the Commodore

● Seen a Commodore somewhere unusual? Send it in! Tell us about it so we can tell the world. Exposure of the brand means more support for Commodore products which is better for everyone. Anyhow - here's a few that we spotted.

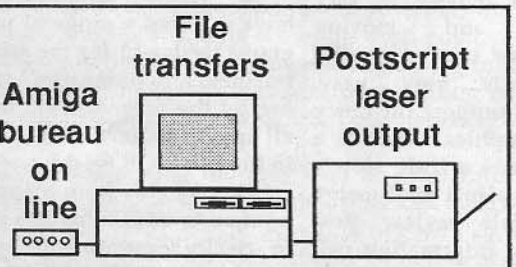
● **Neighbors** : Installed at the office by a guy wearing a Commodore T- shirt was a new A500. During the show it reappeared doing wordprocessing. At one point, a rather blatant plug, the installation man poses momentarily in a very staged fashion, on his way out of the office. We couldn't miss the Commodore logo on his shirt, and Amiga 500 box he was holding!

● **Flying High:** Take a close look at the control tower desks. They're full of Vic 20's!

● **At the ABC** : An Amiga was reported to be left demonstrating several graphic demonstrations in one of the staff areas. Over the period of several weeks, something in the order of ten sales resulted as impressed onlookers decided the Amiga was for them.

● **Food of the Gods**: The sequel to the much loved movie *The Gods must be Crazy* contains an Amiga in the lab where animals grow big from ingesting a special liquid.

● **Big**: Only just! A Commodore 1702 monitor connected to - wait for this - an Atari 800. ❑



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Merry Christmas
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Please have a safe and fun Christmas break and we will be looking forward to spending another year with you all. Thank you for all your support.

See you in 1990

Update

Well, it is nearly Christmas and all of us at Pactronics want to wish you a very Merry Christmas and Happy New Year.

I would also like to thank all of my readers for their support and interest during 1989, and look forward to your continued interest in 1990.

In honour of the festive season, I would like to offer you the following presents:

● BUY one of our superb PACTRONICS DISK DRIVES, as advertised on page 3, send in your receipt and warranty card, and we will send you completely FREE a Word Processor - KWIKWRITE, OR if you like cooking - KITCHEN MANAGER.

● BUY the AMIGA M4 MOUSE, send in the receipt and warranty card, and receive a FREE MOUSE SHOE.

● BUY PROFESSIONAL DATARETREIVE OR BECKERTEXT AMIGA and get a totally FREE JOYSTICK OR COPY HOLDER.

● BUY any 3 PACTRONICS products, send in the receipt and warranty cards, and get a FREE CLEANING DISK OR GAME.

We have some brilliant new products for Christmas, including the IMG SCANNER for the Amiga, VIDEO WIZARD for the AMIGA or COMMODORE, BIRDS 'N BEES for the AMIGA or COMMODORE - a very interesting sexual training programme for ages 6-Adult.

I can't think of a better present for someone with a COMMODORE or AMIGA than one of our great games. eg SKWEEK, THE GAMBLER, ADULT POKER, GOLF MASTER (tape only), LUXOR or MAFDET, and of course on the AMIGA - the brilliant TURBO CUP with FREE model Porsche. And don't forget our very wide range of Amiga books.

Once again, compliments of the season.

M.X.H.N.Y.

P.S. C64 owners - look out for "THE CHAMP" coming soon to your nearest retailer.

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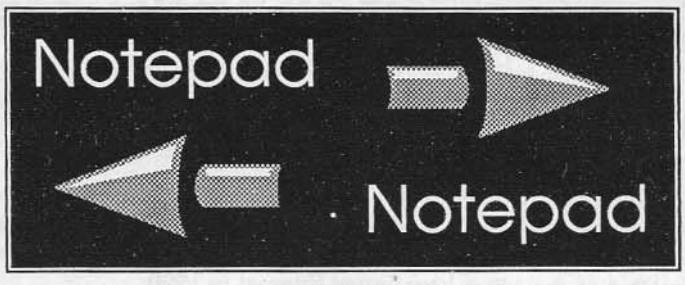

Read and write Macintosh disks - error

In Notepad in our November issue there was an item under the above heading in which there was an error. M.A.S.T. do not have a disk drive that works as both an Amiga and Macintosh disk drive that connects without the necessity for any type of interface.

Kickstart 1.3 incompatibility

● **Stories of many new games not working with Kickstart 1.3 appear to be exaggerations. We know of only one or two. However, we would like to hear from anyone who has more information on titles which are not working with the new Kickstart ROMs. In that way, we can publish a list to help others avoid getting caught.**

It should be noted that compatibility problems like this are not the fault of Commodore. Most of the time the hassles arise when software development companies do not stick to guidelines set by Commodore. These guidelines are decided specifically so that future upgrades of the operating system will not render software useless. By ignoring them, vendors run a big risk of doing just that.

Easy upgrade to Pro-Page 1.3

● ***Owners of Page Stream and PageSetter will be pleased to know they can upgrade to the latest version of Gold Disk's Professional Page for a mere $150. All you have to do is send the front page of your user manual, along with the money to the recently appointed Australian distributor, In Touch Tutorials.***

Major improvements have been made on this new version of Professional Page. Now, the nearest competition - Page Stream - will be set back a few steps. The latest release of ProPage uses CompuGraphics Outline Font Technology. This arrangement enables fonts to be scaled up to 127 points automatically. Output quality is excellent on LaserJet or Dot Matrix. PostScript goes without saying as the best.

However, CompuGraphics fonts also means more fonts! For an extra $200 you get an extra 35 typefaces - not to mention those which come with the package. This is very reasonable considering typesetters often pay hundreds of dollars for a single typeface.

On screen the result is as good as on page. This is an exciting development for the Amiga - watch for a full review real soon now. In-Touch Tutorials (02) 954 3735.

A2090 orphans

● Although it originally sounded as though owners of the 2090 hard drive controller for the A2000 would be able to upgrade, we have been assured that is just not possible. So despite owning Kickstart 1.3, autobooting is still not available. However, there is talk of a small card which will inhabit one of the spare A2000 slots. This card will look for the A2090 and then auto-boot from it. An expensive use of a slot and a lack of forward thinking from the designer. Nevertheless, a whole lot cheaper than buying a new controller!

ProWrite 4.1

● **If *WordPerfect* is a bit out of your budget, perhaps *ProWrite 4.1* could be the answer. Like *WordPerfect*, it's a port from the IBM world. There are a number of Amiga features, like pull down menus. Text highlighting is not supported - in other words you can't just grab a block and then copy, cut or paste. The method used is the old mark start of block, mark end of block and then do whatever you wish. This is a lot clumsier than Amiga users have come to expect.**

ProWrite **makes up for a few shortcomings by excelling in other areas. The search and replace is very powerful, and moving around your text using the keyboard is very easy. There's no support for fancy fonts or graphics. There is a spellchecker - a little slow - and there's also a mail merge facility. Full review next month. For information call Pactronics on (02) 407 0261.**

AniMagic

● *Aegis are rumored to be a little unsteady at present - their demise would be a very sad thing indeed. However, someone is bound to take up their products and continue the Aegis tradition.*

The latest entry to the Aegis stables is AniMagic. If you're into piecing together animations, trying out special effects, and editing together various creations, this could be the program for you. AniMagic generates special effects and enables editing of animations with spectacular results. Effects include shatters, flips, confetti, colour effects, masks and translucency. Animations can be cropped and sized and transitions between sequences made smooth. Well documented - full review in the new year. Thank you to Aegis for our review copy. Aegis products are distributed locally by Computermate on (02) 457 8118.

City Desk 2.0

● A vast improvement over the earlier version (see review in this issue), however still insists you work with some rather unusual methods in order to get your text on the page. Imports various word-processor formats, and all IFF graphics. Text may flow around a graphic and the version we received (2.01) supported a full PAL display. This version does support Postscript and is pretty good value at $239. Once again, for info call Computermate on (02) 457 8118.

Small business delight

● **Digita International have released a range of programs designed for the small business and home use. Judging by the presentation, they all appear to have started life in the MS-DOS world.**

Day by Day **is an organiser of sorts which enables you to track appointments, and provide yourself with a reminder of other matters such as when to pay monthly bills. Searching sounds pretty powerful - events can be recalled by any word or part of a word. The calendar will last you to the year 2000.**

DG Calc **is yet another budget spreadsheet program. This version allows up to 512 rows by 52 columns. It's menu or command driven, includes cell locking, justification, relative or absolute replication facilities and a numerical accuracy up to 7 decimal places. You can print part or all of a spreadsheet, or cell formulae only.**

Mail Shot **is a mailing list manager which works with your data in label format on screen - the idea being that**

you see exactly how it will look before you print. Duplicates are automatically detected, and subset files may be worked with. Various sorts are supported, and the label layout may be customised.

Full reviews of these products will appear in the January issue. For further information contact Pactronics on (02) 407 0261 or (02) 748 4700.

M.A.S.T. Tiny Tiger II

● *In our November issue we mentioned a new hard drive - the Tiny Tiger II, more powerful and more flexible than its predecessor. It comes with a host of features.*

Unfortunately we confused the phone number, so for more information the correct number to ring is M.A.S.T. (Computer Discounts) on (02) 281 7411.

Amiga Training School

● There's an adage in the computer industry - if all else fails, read the instructions.

Intouch Tutorials have long recognised the shortcomings of a manual. That's why they market a series of audio and disk-based lessons covering most major software and machines.

Until now, however, they haven't had anything to suit the Commodore Amiga. This was recognised as a major shortcoming, particularly as the Amiga is one of the market leading PC's in Australia and gaining popularity at the expense of other types of machines.

Instead of adapting their courses to suit the Amiga, Intouch decided to launch the Amiga Training School - and at the same time branch out into a new area for the company.

The Amiga Training School is set up as a "classroom" situation. Each of the "students" work with others in a group, with access to an Amiga computer. As the lecturer demonstrates the functions of the machine or techniques to be used, the students can follow on their own machines. Of course, the lecturers will be able to explain any difficulties the students might come up with - then and there.

There are two different courses available.

The first is for the absolute beginner, starting with setting it up. It is intended to give new buyers of the Amiga or even prospective buyers a broad overview of the machine and its very sophisticated capabilities.

The second course is for more advanced users, covering the CLI (Command Line Interface) and some of the more advanced uses of the Amiga such as DTP, graphic digitisation and even video and genlocking.

Each of the courses lasts three hours, and includes demonstrations of the latest Amiga software.

Tony Cuffe, General Manager of Intouch Tutorials, sees this as one of the course's hidden benefits. "Those attending the course get the change to see and play with the latest Amiga software without having a salesman breathing down their neck," he said.

The Amiga Training School has been set up with the blessing - and the support - of Commodore Australia. Commodore have provided Intouch Tutorials with several Amiga 500 computers which the students will use.

Intouch Tutorials can be contacted on Sydney (02) 954 3735 for further information or for course bookings. ❑

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LETTERS

A faster Amiga on the cheap

● While everyone would like to have a faster computer, increasing the speed on the Amiga can be expensive to the wallet. A 68020 CPU board costs around $550 which is prohibitive to the majority of users.

There is a cheaper alternative, installing a 68010 CPU to replace the 68000 CPU. It's the same size as the 68000, so it just plugs into the 68000's socket on the motherboard. It is fully compatible with the 68000 command set plus it has four new commands and three extra registeres. It processes the 68000 commands faster than the 68000 does at the same clock speed. (Up to 80% faster for some commands.) The average increase is 16%.

The SetAlert command in WorkBench 1.3's c: directory enables the additional debugging instructions in the 68010.

The cost for a 68010 CPU chip is about $35, available from VSI Electronics Aust Pty Ltd, phone (02) 439 8622.

For more information on upgrading to 68010, check out the Abacus book *More Tricks & Tips for the Amiga* (available from all good computer shops).

So for an investment of $35 (for the 68010), you can have an Amiga which is 16 - 80% faster than the average one without costing you an arm and a leg.

C.J. Wakeham
Miranda NSW

Getting the 1250 to work!

● I am writing in response to the article that you wrote in the June 89 issue "Choosing a Printer".

In this article you said that the MPS 1250 had "simple design faults", and that when you loaded paper it got caught in the printer head. Well, this is easily solved. Before paper is loaded into the printer,

1. turn printer on,
2. press "on line" (so that the ready light is out)
3. press "FF", the "paper out" button should flash red and the printer head will centre
4. select friction feed - place paper in back
5 press "FF" and the paper will load
6. press "online". Voila!

I hope your article did not put anyone off the MPS 1250, it's an excellent and cheap printer. I use it for screen dumps by the Expert Cartridge. With Geos V.1.3 all you have to do is use the Epson FX80 drive and change the dip switches to this position:

1 - off	5 - off
2 - on	6 - on
3 - on	7 - off
4 - off	8 - off

This gives a perfect 80 column printout for a printer that definitely does not have "extra bells and whistles" but performs as good and if not better than any printer for the C64 in its price range. I believe it should be definitely recommended.

Paul Millward
Salisbury North, SA

Ed: Well, there you go. One of several letters we received from satisfied 1250 customers. But then it could be a case of until you try something better . . .

W.O.K.?

● I am considering buying extra memory for my Amiga 1000 and I have some trouble in knowing the difference between a W.O.K. board and a Spirit board. Could you please tell me the difference?

Stuart Johnson
Mt Eliza, Vic

Ed: W.O.K. means with zero kilobytes. In other words no RAM - you need 512K RAM to make it worthwhile.

1541 - easy fix!

● In your September issue a C64 owner, Brenden Blanchard, was facing an irritating, if not entirely frustrating problem with his 1541.

Failure for a 1541 to recognise a disk at all sounds unusual, but recognising the disk again after a period of 30 minutes is even more irregular! I can sympathise with Brendan, as I have had a similar problem with my 1541. Failure to recognise disks is correspondant with my own experiences, however I did not wait 30 minutes to see if my drive worked.

My first impression was that the drive was misaligned. Further examination of the situation aired that my drive's read/write head was hovering between the disk surface and oblivion, no longer able to reach the disk surface to read its contents. Even at rest it would not reach its normal place.

The drive, however, did not have to be torn apart in order to fix the problem. All that was required was the formatting of an unused disk with:

```
OPEN15,8,15,
"N0:TEST,OK":CLOSE15
```

The process of formatting requires the read/write head to be knocked back to a reference point as there will be no markers on an unused disk surface to reference to instead (the purpose of formatting in the first place is to put these markers on the new disk). This referencing, in this case, frees up the head getting it "unstuck". The entire formatting operation is not necessary, but allowing the full format cycle to proceed will act as a diagnoses on your drive's health status after the trauma.

Initialising the disk will probably not prove to be successful. It doesn't move the R/W head around enough to allow the drive to reorganise itself.

I would be interested to know more about the problem Brenden has had and the circumstances. This problem has occurred with my drive a number of times during en-

I would be interested to know more about the problem Brenden has had and the circumstances. This problem has occurred with my drive a number of times during endeavours to back up my trusty GEOS. Testing my copied version led to the drive head tripping and hammering severely, landing the drive head in its perch cringing.

Perhaps Brenden uses a lot of highly protected software which may have made the drive hammer a bit much. There are some nasty protection techniques these days.

I.S. Mulry
Kingswood NSW

C64 drive wreckers

● I have been reading your magazine ever since I can remember. Even though I have never had to write to you for help, I find that reading letters people (fellow 64ers) have sent to you over the years have helped me enough to resolve any problems I've had myself.

I feel now though I must write to you and let all your readers now know of a program I received just recently, called *Disk Hum*. As the name implies, when loaded and run, the program makes your disk drive hum the song *Daisy*. I thought this was really amazing at first, until I tried to load another program after it. No way. The screen flashed orange and every second or third program wouldn't loadat all. Read error after read error. After about 10 attempts the heads were completely out of alignment and nothing would load. Also I don't know if any damage has been done to the motor or not. I'm still waiting for the repair shop to let me know what it will cost.

I hope this will help all your 64 readers to avoid this problem program. Thank you for a most informative magazine all these years.

Michael Fitzsimmons
Whitfield, Vic

Ed: Thanks for the support and the info, Michael.

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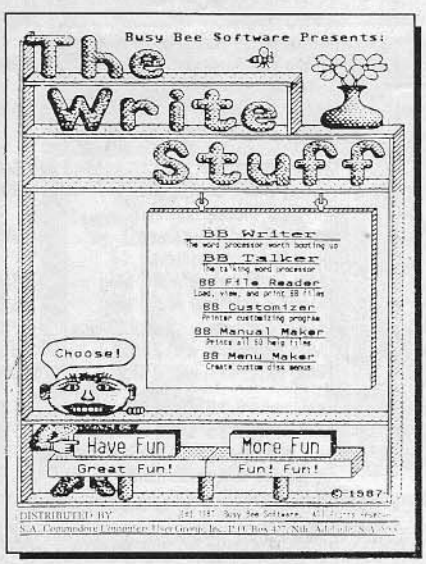
Have you got "The Write Stuff"?

We examined an earlier version of The Write Stuff some eons ago. Now it's available for the C128 too - and the whole program has been improved considerably. One of the few user supported software success stories. Eric Holroyd, still a mad keen C128 user despite owning an Amiga, got busy and put it to the test.

THE WRITE STUFF comes in two separate versions. For the C-128 you get a "flippy" disk with a 40 column version on one side and and 80 column version on the other. I'd never seen it before and decided to write about it as I learned. This review is my first attempt at using *The Write Stuff*.

I'm using the C-128 version in 80 columns in order to compare it with my all-time favorites: *Fontmaster 128* and *Fleet System 128*. *The Write Stuff* is actually a suite of programs with the word processor being known as *BB Writer*.

I had a very swift look through the instruction book before booting the disk (just as we all do!) and found very quickly that the commands are quite logically arranged and use letters of the alphabet prefixed by CTRL keystrokes. Press CTRL/1 to select, then use a function by pressing an appropriate key: "u" toggles underlining, "c" toggles centering, "i" toggles insert mode and so on. This puts a control character in Reverse Video on screen so that you can see what's happening.



A further set of embedded commands are accessed with CTRL/2 and there's a huge range of functions covering such things as: Auto Indent of paragraphs, headers/footers, left/right margins, line spacing, margin release, printing of odd and even pages, page numbering and a great deal more. These commands are entered on the "command line" at the top of the screen in the form: bl4 (which gives 4 blank lines) or ai5 (auto-indent by 5 spaces). All nice and easy.

I've currently got Insert Mode switched on (CTRL/i) which lets me type away madly whilst the text opens up to accommodate my additions. I'm also using Keyclick (CTRL/k) which makes my C-128 sound just like a real typewriter. I've already set my external drive as the data disk drive by pressing CTRL/Shift D (lets you use separate drives as 8 & 9 or a dual-drive unit as 0 & 1).

Now to save the work I've done so far before I do something stupid and wreck it all. CTRL/1 then s (for Save) puts up a requester for the file name to save. I did the Save twice to see what happens and sure enough I was told that the file already existed and did I want to replace it, Yes or No? Good stuff.

Then there's a whole series of keyboard commands accessed by pressing CTRL by itself and it's here where you really see the power of *BB Writer* at work. In addition to the usual things like setting the screen and background colors, tabs, wordwrap etc, you can define some pretty powerful macros to be able to type frequently used words and phrases unique to your profession or industry easily and quickly.

"Macrotyping"... a great time saving feature

● Busy Bee Software (the publishers of *BB Writer*) have also provided a "macrotyping" feature accessed with CTRL/m which then lets you call up a whole range of words and phrases shown as one or two character abbreviations. For example: "have been" is represented by "hb" and with macros switched on all you have to do is press Space, type "hb", press Space again and the phrase miraculously appears on the screen. There are about 90 of these abbreviations listed, including:- Sincerely yours, I will, has had, necessary, everywhere, could be, would, we're.

This is a great time saving feature and one which I know I'm going to like .

Another set of macros have redefined all the CTRL menus I talked about above and with that switched on all you do is press the logo key plus the feature key, ie C= & s is the same as CTRL, Shift and s. Again, these could be very handy to the power user who demands a lot of speed and easy access to functions. So far, so good!

I've now found that the C-128's HELP key (on C-64 you'd use the Up Arrow key) puts up a screen full of commands, then a press of the Commodore Logo key puts up a further screen of useful stuff.

I'm beginning to feel comfortable with *BB Writer* after using it for just this short time and I'm already appreciating some of its finer points.

I haven't found a Word Count yet, I hope there is one. Yes, there is! Page 29 tells me that CTRL/= will give me a word count plus the number of bytes free. Here goes. Very quick too! I now know I've typed 770 words and have 58808 bytes free (think of one byte as a character). The counter also came up with the fact that I've used 17 Blocks.

I've just found the Split Screen feature (available only in the 80 Column 128 version) which can show two parts of the same document, OR you can have two documents in memory at the same time and view them in the Split Screen. Very useful when proofreading as you can edit a copy whilst referring to the original.

This could turn out to be a very long review as I keep finding more and more useful features. Here's one for Viewing Files which lets you point to a file in the Load Menu and view it by pressing "v".

The great thing is that you can do this without affecting text already in memory as the file to be viewed doesn't overwrite memory. If it's an ASCII file you can convert it through TRUE ASCII, PET ASCII or SCREEN CODE with a keypress and there's even a feature to Strip Return characters from a file.

Extra features

● Other major features include: a simple calculator, alarm, screen dump of text, superscripts and subscripts, italics, boldface, condensed, the ability to define special characters (your logo?), decimal tabs, toggle NLQ and Draft printing, automatic capitals (starts each new sentence off with a capital letter. Great!)

Then there's an "Outline Generator", which is a nice feature in itself, and which lets you sketch out a speech, framework of an article or book etc, and prints out with your choice of indented spaces for sub-heads and sub-sub-heads etc.

A sample file (called *BB Outliner*) is on the disk and is pretty well self explanatory. A Search & Replace feature is included which will find and substitute a word or phrase very quickly. A feature which I'd come to love in *Fontmaster 128* (called "Gobble" in that program) is known as "Eat Text" here. CTRL/e lets you delete a character, word, sentence, paragraph, everything below the cursor, or even all the text. The nice thing about this program is that it has a "Restore Text" feature to undo what you've Eaten if you've been a bit hasty.

I looked in vain for a Cut & Paste feature and eventually resorted to reading the manual (!!) The answer is: Use "Eat & Restore". Simply "Eat" the text (CTRL/e) then press "p" to see the whole paragraph disappear in a flash. Now cursor to the spot you want to put it, then press CTRL/rn to paste it instantaneously. Works like a charm!

The only thing to be careful of is that doing a screen preview of your text erases the text buffer so be sure you've Restored (pasted) the text before previewing. Incidentally, you can Sort a list of data by first Eating it then Restore it in alpha sorted order (ascending or descending) with CTRL/ Shift r. Very handy for lists of items.

Eat more text

● There's also an "Eat more text" feature (CTRL/Shift e) which lets you add more text to the buffer without erasing it. Using this you can gather bits of text from various places in the document and then Restore the whole buffer as one paragraph.

BB Writer lets you print in two columns in one pass. To do this, set a column margin greater than zero (cm3 leaves a space of 3 characters between columns) and your second column will be a mirror image of the first. The right margin setting will be ignored and if there isn't enough text to fill the second column it'll be left blank. Columnize short documents by shortening the page length. There's a sample file on the disk to see how it's all done. Moving around the screen is easy enough and the whole thing is pretty easy to drive as I've found out by doing the review this way.

Anyway, there are a number of tutorials on the disk to work through and the manual (which I've referred to throughout this write-up) suggests that you do work through them to get the best from the program.

Before you print you can preview the whole document the screen with boldface, italics, underlining and so on shown exactly as they'll be printed. This makes proof readi easier and saves a fair bit of paper too.

If you've imported a 1581 drive yourself (Commodo don't seem as if they'll ever give us the opportunity to get or through them do they?) this program is compatible with it. also works well with the 1700 and 1750 RAM expanders.

If you're a *Superbase* user you'll be pleased to know that *B Writer* will interface with it and that you may output data fro *Superbase* for word processing. You may also import data t *Superbase* from a *BB Writer* mail merge file for databasing.

Font Toggle is a function that lets you swap between the standard CBM font and one you've defined yourself (40 column only). Using "Ultrafont" from Compute's Gazette (Sept 86) you can redefine the "BB Font" to suit yourself then toggle between the two fonts for your screen display.

Here's an "idiot feature" that seems to have been tailored for a situation I had just last week: If you've ever kicked yourself (as I did then!) for resetting the computer when you thought you'd saved the text file and then discovered that you hadn't after all, then you can effect a complete recovery of the program, including your text, simply by entering POKE 787,234 then SYS 2130 (C-64) SYS 7250 (C-128). Brilliant!

If you have material that you want to keep from prying eyes you can invoke the Encryption feature which displays

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garbage on screen unless your secret password is entered first. Make sure you keep a record (somewhere else!) of that password or you'll never be able to read your own files!

Other Write Stuff Programs

● Some of the other Write Stuff programs are:

● *BB Menu Maker*, which lets you create custom disks with programs loadable by cursor selection. This program must be run in 64 mode but menus created will work in either 64 or 128 mode (the latter in either 40 or 80 columns).

● *BB Manual Maker*, which prints a hard copy of all 68 Help files on the disk. It prints all the odd-numbered pages first then prompts you to flip the paper over (assumes you're using tractor feed paper) to print the even numbers on the back.

● *BB Customiser*, which sets up your printer defaults. This is a very easy to use feature which lets you set up even very strange printers. The excellent manual says that "many printer manuals are not very clear about what decimal values are being sent to the printer to control its special features...". And I thought it was ME!

Anyway, the book takes you through what to do to get your particular printer up and running and there's a printer test file to check that you've done it all OK. If you're a Xetec Super Graphics user (like me) you'll love the little program that downloads your two selected fonts to the interface, then loads *BB Writer* for you. The fonts are called up for use in your document with either embedded commands or keyboard macros that you define yourself.

● *BB File Reader* is only on the C-64 version and is very useful if you want to send a disk of your text files to a friend who doesn't have the program. Simply put *BB File Reader* on the disk and up to 44 text files and he/she will be able to view or print them. You could even use this as a sort of electronic newsletter.

● *BB Talker* is also on the C-64 version and uses S.A.M. (the Software Automatic Mouth program included on the double-sided C-64 disk) to SPEAK your text files. This would be a boon to non-sighted typists, or even those with a diminished degree of sight. It's also great for kids as a learning tool and there's a number of nursery rhyme files on disk too to amuse the very young ones.

C-64 users with CBM 1525/801/803 printers can use a "wedge" program called "PrintRite 64" which was in RUN magazine of May 1987. There are complete instructions for this in the manual and it improves the output from those printers immensely.

I couldn't find this program on the disk but it would be available from S.A.C.C.U.G. or your local user group (as would the Ultrafont program mentioned earlier) and is worth chasing up if you have one of those printers.

I found very few problems in getting to know *BB Writer* as it has much in common with *Easy Script*, *Superscript* and *Fleet System* as regards commands and operation. Users of those programs will find the same thing and it's nice to know that a total of 14 word processors are supported by *BB's File Converter* so that files previously stored in one of those formats can be used in this one too.

I've made a chart showing what differences I could see in the two versions. There could be something that I've overlooked as I did all this in my very first session with *BB Writer* but there's enough there to give you the idea.

C128 users . . .

● A little tip for 128/1571 users: As the C-128 version comes on a "flippy" the drive seems to "hunt" for a long time before putting the directory up on screen. If you have the updated ROMS in your drive this won't affect you, but I don't so what I did was first of all format a blank disk with 'Header "Diskname",Iid' then used a disk copier to copy the appropriate side of *The Write Stuff* disk to it. There is no copy protection so it's very easy to do this. My new disk loads very easily on the 1571 and I recommend that you use this method to make your own master disks then put the originals away somewhere safe.

My main complaints about *BB Writer* were that it had no Spell Checker, Thesaurus or Dictionary. Also, I'd have liked to see a warning that the text buffer was about to be emptied when previewing to the screen. I'm not into telecommunications so it didn't worry me that there was no modem facility as such. Apart from those things (which are all mentioned as possible update features on the mail-backcard) I think it's a very good word processor and excellent value for money.

Review copy from S.A.C.C.U.G.Inc, PO Box 427, North Adelaide, SA 5006

Quick comparison of the C-64 and C-128 versions

Function	C64	C128
Alarm	No	Yes
Auto Capitalization	Yes	Yes
Autoboot Feature	Yes	Yes
BB Manual, BB Menu Maker	Yes	Yes
BB File Reader	Yes	No
Buffer	9k	16k
Calculator	Yes	Yes
Change Case	Yes	Yes
Columns Displaye	d40	40/80
Cut & Paste (Eat & Restore)	Yes	Yes
Decimal Tabs	Yes	Yes
Documentation on Disk	66k	90k
Dvorak Keyboard toggle	Yes	Yes
Encryption	Yes	Yes
Extra Text Area	Yes	Yes
File Translator from other WPs	Yes	Yes
Font Toggle	Yes	Yes
Headers and Footers	Yes	Yes
HELP files (view any time)	64	68
Justify Text	Yes	Yes
Linked Files feature	Yes	Yes
Mail Merge	Yes	Yes
Macrotyping	Yes	Yes
Macros for keyboard & printer	Yes	Yes
Merge & Append Files	Yes	Yes
Modem Support	No	No
NLQ/Draft toggle	Yes	Yes
Outline Generator	No	Yes
Preview in 80-columns	Yes	Yes
Print from any page	Yes	Yes
Print Double Cols (one pass)	Yes	Yes
Read/Write SEQ/PRG/USR files	Yes	Yes
Restore and Sort	Yes	Yes
Save text as ASCII file	Yes	Yes
Search and Replace	Yes	Yes
Set Line Spacing & Page Size	Yes	Yes
Set left/right/top/bottom margins	Yes	Yes
Spell Checker	No	No
Speech using SAM	Yes	No
Superbase compatible	Yes	Yes
Support DOS Commands	Yes	Yes
Support Two Drives	Yes	Yes
Support RAM Expanders	Yes	Yes
Text Area Available	22k	63k
Thesaurus	No	No
Tutorials on DisK	26	30
Use Xetec font downloader	Yes	Yes
Wait between pages facility	Yes	Yes
Word Count	Yes	Yes

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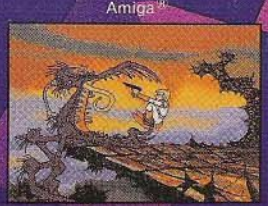

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City Desk Revisited
Version 2.0 Arrives

According to Rod McCallum, the new City Desk 2.0 PAL version is so good, that some higher-priced desk top publishing packages will have to brush up their act.

CITY DESK IS A desktop publishing program for the Amiga. In the form of "Version 1.1" it has found high favour with many throughout Australia who use it as I do, in a professional or semi-professional capacity. In August 1988, registered owners received details of an upgrade, Version 2.0, that would shortly be released. "Send back your original disc, manual and packaging and you can get it for $35US", said the publishers in Texas. Like many others, I shot off my request within days of being notified.

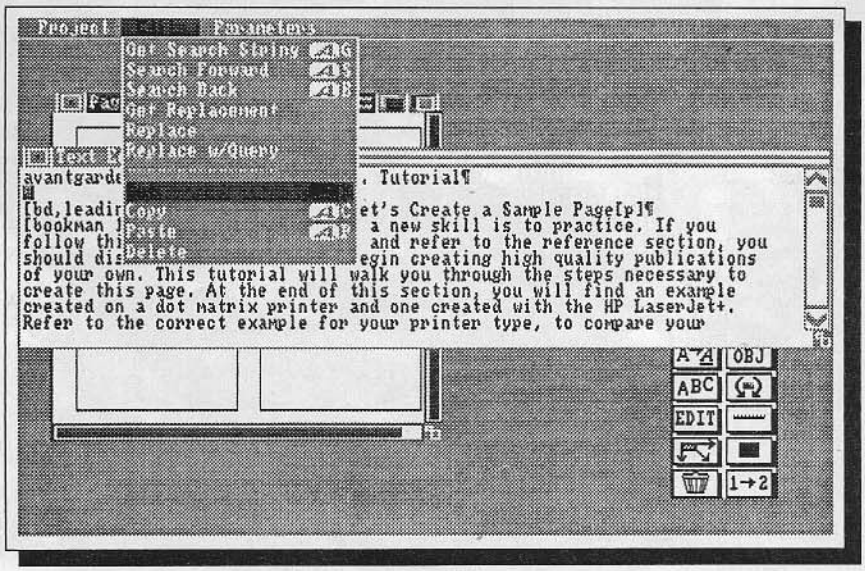
Fourteen long, weary months went by, during which I wrote countless letters to the publishers and met many others who were in a similar situation. A brotherhood of *City Desk* arose with friendships made in Queensland, New South Wales, South Australia and West Australia!

Then, on Tuesday, October 10th, at 11.45 a.m. the sky fell! The postman, true to the expensive advertising campaign that says that Australia Post delivers mail, did just that. He left my brand new, genuine PAL version *City Desk 2.0*! After a wait of just over 14 months for my upgrade from version 1.1 it had finally arrived!

We were just finalising our monthly newspaper, *The Encounter Coast Report*, still using Version 1.1, so it was a bit late to use it to put together our October issue. I had to wait for two days until I could really get my teeth into it. But now, four days later, with many sheets of paper having passed through both my dot matrix and laser printers I can tell you. This program is magnificent. I might say that, in the last couple of months leading up to the final delivery of *City Desk*, a friend of mine from Queensland had kindly let me borrow his version of *Page Stream* to have a close look. "Give up, Roderick", was the advice. "The sods will never send your upgrade. Have a look at this instead."

I don't want to make too many comparisons between *City Desk 2.0* and *Page Stream 1.6* except to say that, as I use a DTP program in a professional capacity, there is no way that a dot matrix can give the typeset quality that I get from my Laserline printer. While *Page Stream* does wonders for dot matrix output it is still a bit blobby in the 10 point to 14 point area. I also got a bit weary of the eternal glitches. *Page Stream* needs more work.

But *City Desk* doesn't, except for one feature that I shall cover a bit further down the track.



Text Editor

Text Editor

● The text editor is marvelous. A full page screen full of your imported text. You have bags of room to move around, shifting paragraphs, cutting, pasting, copying. At this stage you can add the formatting commands that allow *City Desk* to give such excellent results. You can make sections bold, italicise, underscore, indent paragraphs, set tabs, change type faces and font sizes. The format of the editor is very similar to a *Scribble* page, and *City Desk* supports this wordprocessor's files just as it will Notepad, *WordPerfect* and others.

City Desk's page display has always been a favourite with me. I am not keen on programs that make me build and fill boxes. Setting up columns with this program is easy and text flows in at the click of a mouse and keeps flowing, column into column, page after page until complete. You can also auto-hyphenate your copy, giving a most professional result, particularly if you are working with narrow columns.

Version 2.0 has a full-blown graphics editor, rather like a junior *DeluxePaint*, letting you construct your own, special pix, cut them like a brush, and drop them onto any page you wish. On the page, you can resize, either in aspect ratio, which means that it won't distort, or you can distort it if that is the effect you want. Although I haven't tried it yet, the *City Desk* manual suggests that you can multitask with *Deluxe Paint*, if you have enough memory.

Other DTP programs I've had a look at can flow text around graphics. The results are there, but always sitting in a rectangular space. *City Desk*, however, will actually follow the OUTLINE of irregular objects. No longer do you have to endure the "short back and sides" effect, and you can tell the program how much standoff you need between text and graphic. This is another very professional touch that I shall take much pleasure in using.

Toolbox

● The toolbox is simple to manipulate. There are sixteen icons and two of them I find particularly useful. One is the "explode" tool that zooms any page magnification so that the whole monitor is filled with your work. The other is the box tool that creates screened boxes from zero percent to 100 percent. It means that you can emphasize a section of type, say, by laying it over a 20 percent stipple. Again, a professional touch that shows the extent of planning that the programmers have put into this software with serious users in mind.

The resizing tool from the toolbox is extremely versatile. With it you can select a block of type and stretch it out to double column. I often set up an article with a two column subhead in bold under my headline, then drop back to single columns. The sizing tool also lets you cut up your copy into chunks so you can move them around the page with ease. A subeditor never had it so good!

For laserprinter users there is pure gold in the Laser Utility that comes on the second disc. With it you can now download soft fonts into your HP laser printer, and just as a bonus you'll find four downloadable fonts on one of the data discs giving you 12 point, 12 point bold, 12 point italic, and 24 point bold under the key of CMR. Soft fonts will increase your type book considerably and are much cheaper than buying cartridges. If you have a Postscript laser all of Version 47 fonts are here in any size, bold, italic and bold-italic.

For 24 pin dot matrix users one of the data discs has a sampling of fonts that have been structured for 24 pin printers. You'll find a face called "Unity" with 6, 10, 12, 18 and 72 point fonts. Also on data discs (there are four discs that come with *City Desk*) are a hard disc installation program and a utility called DU5 that helps you maintain and manipulate your files. If you've given up on learning the complexities of the CLI this is for you. There is also a section on this program that shows, on the screen, how fonts will look before you print them out.

You can also use macros. This is a highly useful facility for those of us who are lazy. I will be able to store bits of data such as addresses, publisher's information etc. as short macro commands and get *City Desk* to do the work by printing them out in detail where I decree.

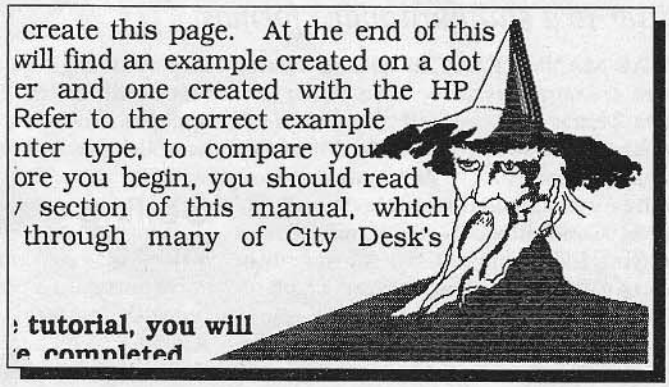
How easy is it to learn a program that offers so much? No problem at all, and that is due to two things, the way the program is structured, and the first class manual that comes with it. There is just nothing difficult in this nifty, ring-bound book. Sometimes manual-writers get carried away with their deep knowledge of computers and finish up writing baffle-gab. There is no "computer jargon" language in this book. MicroSearch obviously went to school on their first effort, Version 1.1, then used just about every bit of feedback to construct a first-grade product.

Criticism

● Yes, for my money it does lack one thing. Why not on-screen rulers for measuring up placement of columns? The alternative is to measure up your sheet, and figure out the margins and gutters which, when entered into Preferences, become your formatted page. Setting up columns is still very easy, much easier than boxes, but I'd like to see MicroSearch add rulers like Page Stream has.

But, that apart, I now have everything I need for professional desktop publishing. I believe that the recommended retail price in Australia is about $280. Worth it! If you are serious about DTP don't hesitate!

PS: I ran a lengthy comparison between City Desk 2.0 and Professional Page. City Desk has a number of features in the graphic handling area such as the ease of cropping, ragged text flow around bitmap images and speed of placement which are considerably better. However, the main advantage - easy text editing - is easily achieved with Professional Page with the new version 1.3 and a Transcript. Furthermore, there are still many areas where Professional Page excels beyond any near competitor. A full review of the above mentioned two products will appear next month. As it stands now, I would still recommend Professional Page as the ultimate desktop publishing program for serious use - Andrew Farrell. ❑



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Hold on to your Genlock ...

a comparison of available models

by Peter Ward

A KEY FEATURE of the Amiga computer is the ability to transfer some rather remarkable graphics from the computer to a standard video format.

AS MANY READERS will be aware, there are currently three main video formats being used around the world at present. In Australia we use the Phase Alternating Line (PAL) system, as opposed to the American National Television Standards Committee (NTSC) and French Systeme Electronique Couleur Avec Memoire (SECAM) video formats. The first major hurdle in getting Amiga graphics to video is that none of these systems use the same format as used by the computer, or more correctly, by the High Resolution Colour monitor responsible for displaying those amazing graphics.

The exception being the Amiga 1000. Yes, it does have a colour composite video-out port, however, the quality of this output is best described as "low end". The Amiga High-Res monitor uses separate Red Blue and Green (RGB) colour (Chroma) and brightness (Luma or Intensity) video information from the computer to display its high quality image. Thus, the first hurdle for the budding Amiga videophile is to obtain a device which will accomplish this feat.

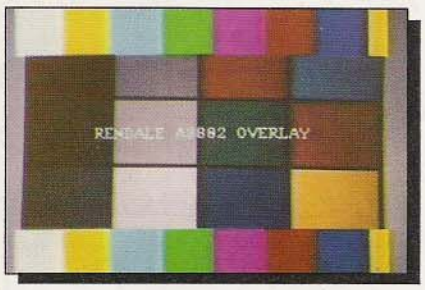
Getting graphics to video

● Broadly speaking there are two types of devices which can transform Amiga graphics to video. Encoders and Genlock/Encoders.

An encoder combines RGB information with vertical and horizontal blanking and synchronization pulses and produces "composite video". The Commodore A520 modulator is such a device, with the price tag reflecting the quality.

On the other hand a generator locking device (Genlock) for the Amiga without going into too much detail, locks or synchronizes the different sync pulses from two different video sources so that they are in effect "in phase" with one another. Thus, by firstly encoding the Amiga video signal, then locking the two synchronizing generator signals or sync pulses, a genlock can combine two different video sources, and hence allow Amiga graphics to be superimposed onto a background video picture (or vice versa). The task of the genlock/encoder is a difficult one.

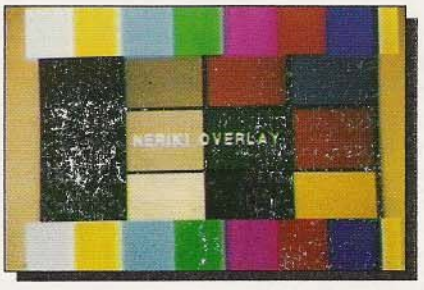
Firstly, it must encode the RGB output from the Amiga without too much loss of quality, despite the fact that the bandwidth of the output signal is being reduced. Secondly it must be able to switch very rapidly from the incoming video signal to the encoded Amiga signal to achieve the overlay effect without degrading the live video being fed in.



Rendale A8802 overlay

Minigen overlay

Ausgen overlay



Neriki overlay

Setting the test

● With these thoughts in mind we set about testing several Genlocks now available for PAL system usage. The units tested were the Minigen, Ausgen, Rendale A8802, Neriki Desktop and the Professional Rendale 8806.

Unfortunately both Rendale units arrived a little late - after testing of the other three units had been completed in an editing suite.

To be fair not all testing conditions were precisely identical, however general conclusions should still be valid. The ideal way in which to test all of these units would have been to have examined studio test signal fed through the Genlocks and compared outputs on a waveform monitor and vectorscope.

We are talking very big bucks to hire such equipment, so a compromise solution had to be reached. To test the Genlocks the following procedure was adopted. Firstly the purely encoded image was examined for saturation and contrast using SMPTE colour bars displayed via the composite video-in port of an Amiga 1084 monitor. Modified Colour bars then were overlaid onto a colour test card image obtained from a Super VHS camera and then compared.

The overlaid signal was copied onto Super-VHS video tape, as well as standard VHS tape to examine the results of a first generation copy, and the limitations imposed by the "home recording" process. This first generation tape was then copied twice to examine how well the encoder section of the Genlock stood up under marginal conditions.

Minigen

● The smallest and least expensive unit tested was the Minigen made by Applied Systems Developments Ltd. The Minigen is supplied with a manual and software. The unit is simply installed by plugging it directly into the RGB port of the Amiga. Attach video in and video out cables via the RCA connectors at the back of the unit, and the process is complete.

Control of the Genlock is via a three position switch, which allows: Amiga graphics only, video only or combined outputs. The Minigen does not need an external sync signal for the encoder to work, as a matter of fact, even when grossly unstable external sync is applied, the Minigen has a "rock steady" overlay, which goes on displaying Amiga graphics with no "tearing" no matter what the background video signal is doing. Frankly, I was a little suspicious of this remarkable tracking, or more precisely, sync actually being being applied by the genlock. Closer examination of what was going on revealed a loss in contrast of the in-coming video.

Without a waveform monitor and vectorscope it is difficult to say for sure that the incoming video was not being resynced or degraded, however, there was definite "leaking" of background video through to the foreground Amiga graphics with the Minigen. The encoded colour bars also showed vertical bands where solid areas of colour should have been seen.

Cross-Colour, a "rainbow" like effect areas of high contrast was also seen, however, the MiniGen was not alone here! Saturation of the encoded and overlaid colour bars was good, and the Minigen stood up well to first through to third generation video tape copies, with the encoded colours being well saturated in all cases. For the home user, the MiniGen represents excellent value for money.

Ausgen

● The second Genlock tested was the AusGen (already previewed in this magazine, January 1989). The unit tested is the current and only model being supplied by AusGen, and like the MiniGen is extremely simple to install. The AusGen is supplied with a comprehensive manual, RGB cable, external power supply and software.

Connectors used by the AusGen are the BNC type, which give a better connection and shielding, and are less prone to coming loose when compared to RCA connectors. The AusGen plugs into the RGB port of the Amiga, and also has a RGB "pass through" cable which allows monitoring of the Amiga's graphics independently of the incoming video. Video in and out ports were connected, power supplied and the unit was up and running.

The AusGen requires an external sync source to function. Simply put, the Amiga would not boot without it, however this is mentioned in the manual. The encoded colour bars were extremely good with the AusGen, no banding was visible in areas of solid colour. Depending upon the quality of the

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AMIGA

external sync source the degree of cross-colour was variable, the better the source, the less the effect.

There was very little to no leaking from background video to foreground graphics using the AusGen, in fact, regardless of price it was one of the best units tested in this aspect. There was no loss of contrast in the external video. The AusGen had a slight loss in the saturation of overlaid colours using a live video source.

First generation VHS and Super VHS tapes were of good quality, but by the third generation the AusGen colour bars were decidedly subdued. An aspect where the AusGen particularly went astray was tracking of the overlay, when using a tape as the video source. Any instability in the external video was faithfully reproduced in the overlay using the AusGen. Overall the performance of this unit was suitable for the high end home user or semi-professional.

Neriki

● The next unit tested was the Neriki Desktop. The Neriki is supplied with a demonstration disk, concise manual, and RGB cable. In addition to RGB and video in and out ports, the Neriki also has a loop out and RGB monitor connector. Video connectors on the Neriki were also of the BNC type, again with the stated advantages.

Installation is relatively straightforward. Connect the RGB cable from the Amiga to the genlock, connect video in and out cables, and plug in the power cable.

External sync has to be applied to the Neriki, however this can be removed once the unit is up and running. The Neriki Desktop was the only unit tested with a "fader " control, a highly desirable feature which allows a gradual dissolve (in or out) from background video to foreground Amiga graphics.

The encoded colour bars of the Neriki had excellent saturation, in fact if anything, they were a little "hot". No banding was visible in solid areas of colour, clearly a good encoder section was installed. Cross-colour was also seen in encoded areas of high contrast using the Neriki. The overlay using a live video source had extremely well saturated colour bars, and again were a little on the "hot" side.

There was very little leaking from background video to foreground graphics. The taped colour bar overlay from the Neriki was excellent from first through to third generation copies, with the "hot" colours at the live video stage being an asset by the third generation on tape.

Degradation of the encoded signal was clearly on a par with what was happening to the tape itself on multiple generation copies. A better result could not have been expected. There was little or no instability with tracking external taped video using the Neriki, with the unit performing well with both good, and not so good taped material.

The Neriki Desktop performed very well in all aspects, both price and performance place it in the semi-pro to professional range.

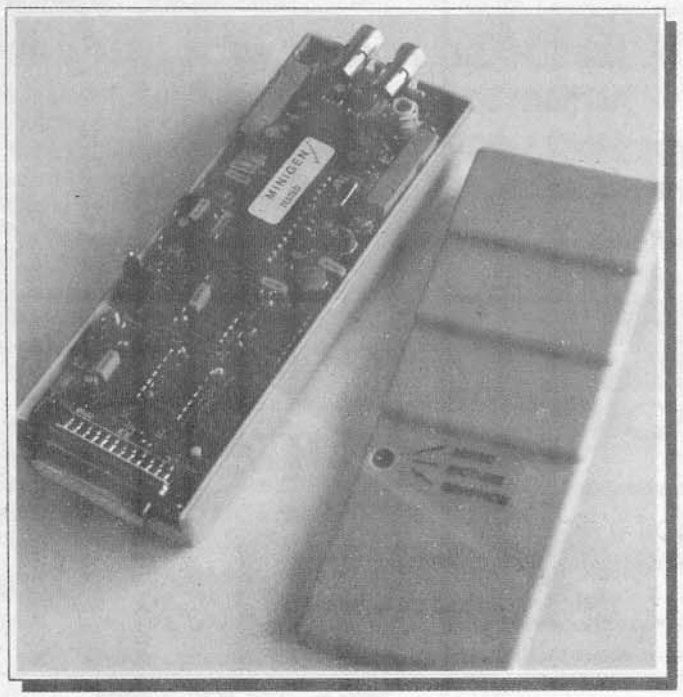
Rendale

● The last two Genlocks tested were manufactured by Rendale, however they arrived after testing on the first three was completed. While I was able to obtain some of the equipment used in the testing of the first three units, multiple generation Super VHS/VHS copies could not be made and a Sony Video-8 colour camera was used in place of a JVC Super-VHS camera.

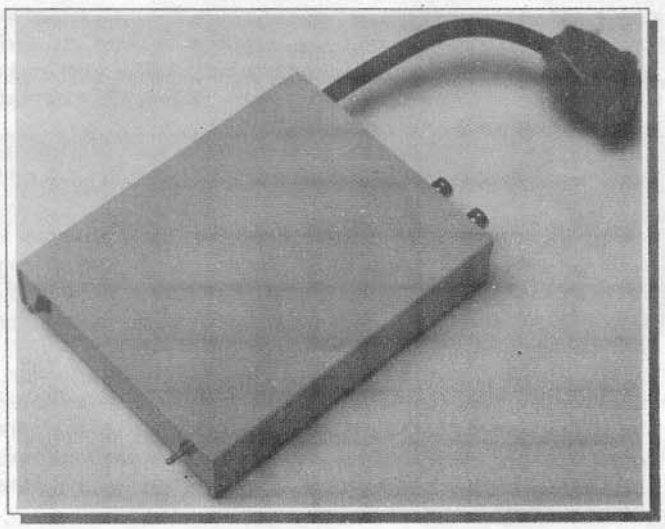
The Rendale A8802 is supplied with a manual, software and a 25 Pin "D" connector. Reading the manual revealed that a control cable has to be made by the owner, before the Genlock can fully function. There are no external switches on the Rendale, all controls are performed with software.

A quick trip to Dick Smith's for the relevant control cable parts, and the unit was soon up and running. The Rendale also uses BNC connectors and draws power directly from the Amiga. The genlock did not not require external sync to function, and could be used as a straight encoder. The encoded colour bars were on a par with the Minigen, vertical bands in solid areas of colour, and cross-colour was also apparent in areas of high contrast.

Saturation however, was good. The overlaid colour bars also had good saturation, though leaking from background



Minigen



Ausgen

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Commodore

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tion, though leaking from background video to foreground overlay was present. The A8802 showed no signs of degrading the incoming video and tracked both VCR and Camera video sources very well, with little instability in the overlay. The taped output from the unit was good on first generation copies using both Super VHS and Standard VHS formats.

A rather nice feature of the A8802 was the ability to select a colour, other than Amiga colour zero, which could be treated as transparent. Overall this unit would be best suited to the high-end home or semi-professional user.

The last unit tested was the Rendale A8806. The several thousand dollar price tag was also matched by a very large case, which is designed to be placed under an Amiga 2000/2500. The unit is supplied with a control cable, RGB cable and software, including a comprehensive "DOCS" file, plus a few pages of printed instructions.

The unit uses the A2000/2500 power plug, and supplies power directly to the A2000/2500 on sensing that the Amiga is switched on. With appropriate cables, the A8806 can also be made to work on the A500, with power coming from the computer. External sync was not necessary for the unit to function, indeed, a high quality internal sync generator is fitted to the A8806.

Aimed squarely at the professional market, the A8806 was the most fully featured unit tested, with connectors for Key Out, Sync Out, separate "RGB" and "I" connectors. Studio blanking and RGB monitor connectors are also fitted.The encoded colour bars were by far the best of any unit tested. Contrast saturation and hue were all great. No vertical banding was seen in areas of solid colour with virtually no cross-colour in high contrast areas.

Colours other than Amiga colour zero could be treated as transparent by the A8806. The A8806 also has a mix select button which gives either a composite or RGB mix. With RGB selected, full bandwidth Amiga graphics with a video background can be ported to the Amiga monitor (or studio encoder), the resulting image has absolutely no dot crawl, cross-colour or loss of detail in the Amiga graphics (though eventually some would have to be accepted after encoding).

To allow perfect centering of the Amiga overlay, a horizontal phasing control is also fitted. When composite mixing was used, there was slight leaking from background video to foreground Amiga graphics. The overlaid colour bars were well saturated with good contrast. Using an RGB mix, there was a drop in Chroma on the incoming video.

First generation tape copies in both VHS and Super-VHS were excellent, though it would have been good to have seen a separate Y/C connector fitted to take full advantage of the Super-VHS format in a high end unit such as this. Another disappointment was the lack of a "fader", though, I gather this unit is intended to be used with a studio switcher making such an option redundant.

In short, the Rendale A8806 has professional features with performance to match.

Ratings

● In an effort to summarize the performance of the genlocks tested, a rating table was constructed, with most items being self explanatory. "VIDEO thru QUAL'T", refers to loss in quality/ contrast of the incoming video when compared to the genlocked video signal, when an Amiga overlay is applied. None of the units tested was a real "lemon" and in numerous cases differences noted were to be expected from the pricing. Overall, the Neriki Desktop comes out "best on points" with features, performance and price all considered. The best performer on an unlimited budget was the Rendale A8806, and for the home budget the Ausgen is hard to go past.

Many people need to be thanked for their assistance in supplying either their equipment or advice or both in making this review actually happen. David Thompson, maker of the AusGen, for his technical advice and Genlock. Thanks to Tom Quealey of the Computer Spot retail chain in Sydney for supplying a MiniGen for testing. Cindy Wong of Computamart on the West Coast, for shipping the Rendale Units over to us here on the East Coast. (I really did not want to ship the professional Rendale back to Cindy). Mario Nicotra for his helpful prompting and John Barnard for the use of his editing suite. Lastly, my wife for putting up with VCR's, video cables, cameras, Genlocks and computers all over the house for the week it took to test all of this equipment.

Computer Spot (02) 419 2333, Computa Mart (09) 328 9799, Ausgen (02) 639 6686, Neriki (02) 488 7133.

Super VHS is amazingly superior in quality to standard VHS. With 400 horizontal lines of resolution, and super crisp colours the improvements are immediately obvious, even on a standard colour television. We tested out the JVC HR-S5000EA player and GR-S77 camera together with the Neriki Desktop Genlock.

Although we had some difficulty getting the right combination of cables, we eventually managed to achieve some excellent results. The system enables very smooth edits thanks to a flying erase head. You can also dub audio tracks onto your edited video at a later stage. The Upser VHS resolution is ideal for work with the Amiga, which is able to reach comparable resolutions.

Although time did not permit an in depth evaluation - we could positively say you would be very happy with the JVC system. It has many versatile features, and produces good results. Pnly criticisms would have to be the manuals - which are incredibly difficult for the non-technical minded to follow. Video buffs will feel right at home. The S-VHS camera features 8 x zoom, direct play back, digital superimpose, auto or manual white balance and focusing, multiple speed shutter, 10 lux sensitivity, quick review, zero frame editing and a lot more.

For the ultimate player, the S5000 boasts some very sharp lines,a flip down control panel concealing a mass of ergenomic buttons and selectors. Features include Hi-Fi sound, fly erase heads, long play mode, dead perfect frame by frame advance, variable speed search, tape indexing for fast location of prerecorded sequences and all the usual timer features. RRP $2299.

Thank you to JVC's local distributor, Hagemeyer for loan of the above equipment.

	Minigen	Ausgen	Neriki	A8802	A8806
External power	no	yes	yes	no	yes
BNC connectors	no	yes	yes	yes	yes
External switching	yes	yes	yes	no	yes
Software control	no	no	no	yes	yes
RGB pass thru	no	yes	yes	no	yes
Fader	no	no	yes	no	no
Encoder saturation	good	v.good	v.good	good	excellent
Cross-colour	average	good	v.good	average	excellent
Background leaking	average	excellent	v.good	average	v.good
VCR tracking	excellent	average	v.good	v.good	v.good
Video thru quality	average	v.good	v.good	v.good	excellent
1st gen tape	good	good	v.good	good	excellent
3rd gen tape	good	average	excellent	n/a	n/a
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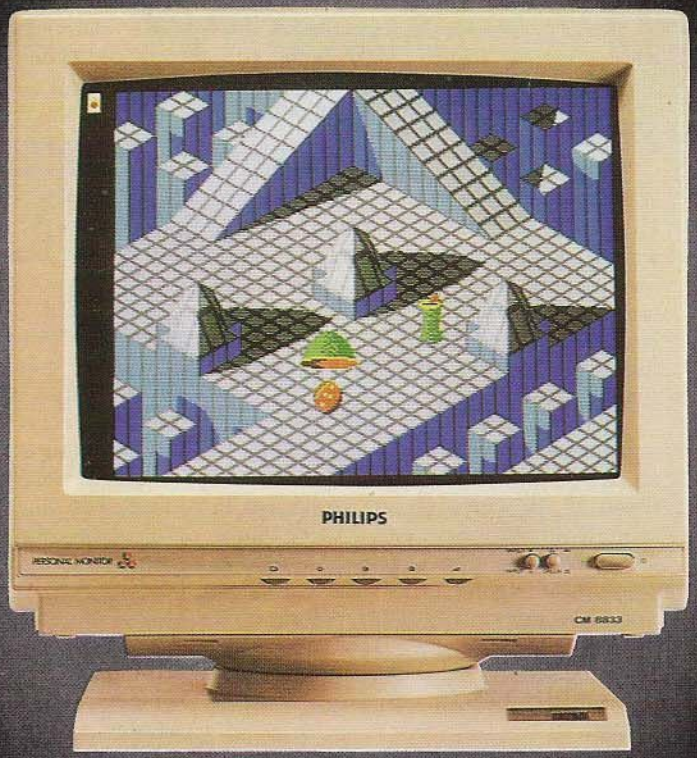

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Let's go to 'Warpspeed'

by David Fong

Another speed up cartridge? For a change C128ers are looked after too! Read on.

COMMODORE 128 USERS are no doubt painfully aware that whilst C128 programs load with blinding speed in 128 mode, the majority of C64 programs dribble into the computer at an excruciatingly slow rate. The same Commodore 128 owners know that most 'fast load' cartridges are quite incompatible with the C128, tempting fate by demanding that the user pull the cartridge out and in again every time the Commodore 128 owner wants to enjoy the benefit of a different mode. Meanwhile, many Commodore 64 owners simply want a good fast load cartridge, blissfully unaware of the Commodore 128 owner's plight.

I am happy to report that a cartridge has been released that satisfies the requirements of all Commodore 8-bit computer owners in the form of Cinemaware's first hardware release, Warpspeed.

Better known for their interactive software movies, Cinemaware have produced an impressive product for those who want a fast loader and utility cartilage.

What makes this cartridge stand apart is its compatibility with the Commodore 128 mode, 1571 and 1581 disk drives. A simple switch on the cartridge allows the Commodore 128 owner to change modes (no more holding down the Commodore key!), and a reset button is also thoughtfully provided for Commodore 64 owners who do not have one.

Warpspeed will not 'freeze' programs, and hence will be of little illicit value to all those pirates out there. However, those of us who use our computer in more legitimate ways will find no shortage of features. The 17 page manual appears daunting for a fast load cartridge, but a few moments in a comfortable chair soon sorts things out. For those not so patient, the cartridge can be simply plugged in and the benefits of faster loading reaped.

I have conducted the following tests myself on a Commodore 128D (1571 disk drive with revision 05 ROMS). Of course, '64' tests are in 64 mode with the 1571 drive in 1541 mode.

Immediately apparent are the faster load times, up to 6 times as fast as a stock 1541. Unlike some other cartridges, Warpspeed is no slouch when it comes to saving program files, and again there is an improvement over the stock 1541. Formatting, verification and copies are all done at turbo speed. Unfortunately, scratching and validating are done at the normal speed.

The real surprise lies in wait only for those who read the manual (or, alternatively, those who stumble upon it by chance). Warpspeed saves all programs in a 'skew 6' format, which allows programs to be loaded faster yet again. In case you are worried, a stock 1541 can still read 'skew 6' format at the normal speed. Some copiers (such as Renegade) and Warpspeed's own copier allow copying of files in 'skew 6' format, allowing some commercial programs with light copy protection to be completely converted to 'skew 6' format.

However, Warpspeed still has a few tricks up its sleeve. Included in both C64 and 128 modes is a wonderful menu driven utility. Standard operations include file copy, maintenance and execution of programs. All these functions are menu driven and are as 'user friendly' as they can get without the use of mice. More fascinating is the provision of an integrated sector editor and machine code monitor. Besides altering disk contents, the sector editor can 'trace' a file as it wanders through the disk.

Screen dump capability is also provided. The machine code monitor works both with drive memory and computer memory, and has the familiar functions present in most machine code monitors. Unlike the Commodore 128 inbuilt monitor, the Warpspeed monitor allows scrolling up and down through the assembler/data in memory, a very useful feature.

Many of Warpspeed's menu-accessible functions are also available in direct mode. These include disk command wedges, 'unnew' BASIC programs and 'killing' the fast load aspect of Warpspeed. For those who use their computers in front of Apple II users, there is an 'auto menu', which allows programs to be executed from a cursor operated menu. Commodore 64 owners can also execute the first program on the disk by pressing commodore key and run stop simultaneously, similar to 'shift run-stop' available to 128 owners.

Warpspeed is a reliable product (the current version is not 1.0) which I have never needed to take out of the expansion slot. It has made the use of many programs bearable and quick. It lacks some features found in more expensive cartridges, such as function key definitions and extra BASIC utilities.

However, I can only recommend Warpspeed as the best fast-load cartridge for the Commodore 128 owner, and a very healthy contender for the hearts and minds of Commodore 64 owners as well.

Times are identical with skew 6 and skew 10 (normal) format for the 128. Note that *Guderian* carries no copy protection at all. *Europe Ablaze* does have copy protection. I have also tried Warpspeed successfully with *Fontmaster 128* and *Power C. Power C 128* does not save properly with Warpspeed, though *Power C 64* works very well indeed with Warpspeed.

Review copy from Mindscape (02) 899 2277. RRP $59.95. ❑

	Guderian (3 parts)	Europe Ablaze (4 parts)	127 block file
Normal 64			
Load	116 seconds	362 seconds	81 seconds
Save			83 seconds
64 Warpspeed			
Load	31 seconds	118 seconds	12 seconds
Save			10 seconds
64 Warpspeed skew 6 format			
Load	27 seconds	98 seconds	12 seconds
Save			10 seconds
128 with 1571 drive			
Load			8 seconds
Save			61 seconds
128 Warpspeed with 1571 drive			
Load			10 seconds
Save			10 seconds

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Digitising with Perfect Sound

Imagine being able to place practically any noise into your Amiga as a file and being able to vary the speed of the record and playback and even to play it back in reverse!

PERFECT SOUND MAKES IT all possible. A small box plugs into the printer port and the two plugs on the back accept the left and right channels of your input device using standard RCA type connectors. I used my old ghetto-blaster with the Amiga and it works fine both ways.

The program is loaded and commences with a excellent demonstration of its capabilities. The menu choices are vast, allowing you to copy, split from stereo to mono and even to combine two separate pieces into one stereo composition. Files can be appended, linked, deleted, loaded, and all the other usual facilities are supported.

Recording

● Recording is as simple as selecting 'record' after setting the record speed of course, and when you press the mouse button that's it! As soon as the memory is exhausted or the music finishes, it is captured and ready for use.

The memory can hold only short pieces (less than 30 secs) but this can be extended slightly by using 'mono' mode and slowing down the sampling speed, at the expense of sound quality. The higher the sampling rate, the better the recording, that is the rule, unfortunately, at the highest sampling speed there is but a few seconds to capture the sound.

I'm sure that as technology advances, there will be big improvements in sampler equipment. This is not a criticism of *Perfect Sound*, merely pointing out that sampling and digitising sound is a memory expensive business and the fact that it is possible on your 'average' home computer is a remarkable achievement on its own.

The fun things which are possible with *Perfect Sound* are endless. I recorded my 11 year old son reciting some poetry and played it back slower - I said that he would sound like that when he was 18. He was not impressed because he sounded like Dave, of Dad and Dave, although I very nearly had hysterics at the sound of it. Other projects were the recording of such diverse artists as Jimi Hendrix, Steppenwolf, Ian Dury, J.J.Cale, Spy Vs Spy and others, all with excellent results.

A particularly interesting one was the start of *Born to be Wild* played in reverse. A local Harley Davidson owner was quite impressed with the Harley sound in reverse until I told him it was backwards!

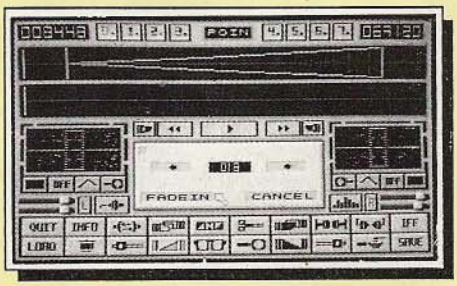
Other fun things to do were the changing of sound tracks on various disks (back-ups of course). Not all of them worked but *Offshore Racer* sounded good with Steppenwolf playing on the intro screen (that's about the only good thing about *Offshore Racer*). My own voice said "Well, Bill, what about this then?" on the startup of a disk given to my old pal Bandaide Bill.

Criticisms

● I had a lot of fun with *Perfect Sound* but as usual there were a couple of minor criticisms. One is the fact that your printer is disabled while the cartridge is in place. Possibly *Perfect Sound II* will have a pass-through plug. The other criticism (also very minor) is that the files take up a lot of disk space. Only three files can be stored on a disk in un-compacted form, so I found myself rapidly running out of blank disk space.

There is a compacting option which saves space but the files are then unsuitable for use with the usual music player programs. Good points outweighed the bad points though, with *Perfect Sound* being an excellent introduction to sound digitising. Priced at around $200 it is a fairly expensive item but the fun that can be had with it lasts for a lot longer than $200 does. *Perfect Sound* from Sunrize Industries is available from most large computer outlets.

Available from Computermate Products (02) 457 8118, RRP $189. ❑



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Using Sprites

by Brendan Burns

If there are any basic programmers out there who have wanted to move into the world of graphics but have never quite known how, maybe this is the solution to your problems - SPRITES!

SPRITES ARE SIMPLY high resolution programmable objects, the size of about nine ordinary text characters. They can be moved about the screen, changed colour, expanded to up to twice their normal size, and called upon the screen in a fraction of a second. You can put up to eight different sprites on the screen at once, single colour or multi-colour, and detect collisions between them.

Everything about the sprites is controlled by the VIC chip (VIC is short for Video Interface Chip), so to produce a sprite you have to poke all its details into the locations of that chip.

Well, enough about what sprites are and what they can do. Now I'll show you how to program them.

To start, you have to design yourself a sprite. Draw a grid as shown below, or use it if you like. Each square in that grid represents one pixel, or one dot on the screen, and can be turned either on or off.

See figure 1 below.

I have done a simple sprite design of the Commodore symbol as an example:

See figure 2 below.

On your grid draw a design, filling in each square you want to be shown. Once you have finished designing your sprite, you now have to poke your design into the VIC chip. To do this you add up the bit values in each byte, and put them into data statements. In simpler terms, you add up the numbers this way:

Each space on the grid takes up one bit of memory. Eight bits equal one byte. If you look up the top of your grid, every eight numbers contains this number sequence:

128, 64, 32, 16, 8, 4, 2, 1.

These are the bit data values, and they have to be added together to form each BYTE data value. So, what you do is look at each eight number and add up each bit data value that is used in design. For example, if one line of eight numbers (or BYTE) looked like this:

. x . x . x x x

Then this is how you would add it up:

128 64 32 16 8 4 2 1 (BIT data values)
= 64+ 16+ 4+ 2+ 1
= 64+ 16+ 4+ 2+ 1= 87= BYTE data value

You then do this for every BYTE of numbers in the grid, starting at the top left hand corner and moving left to right across the grid until getting to the bottom right hand corner of the grid. When you have finished, put an extra zero at the end of your data values.

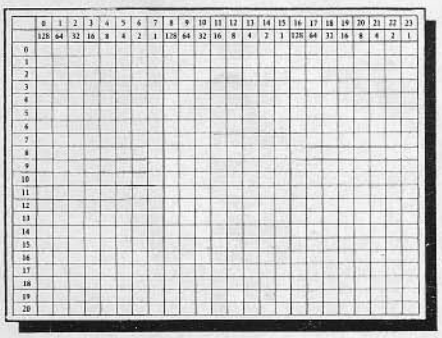

Figure 1

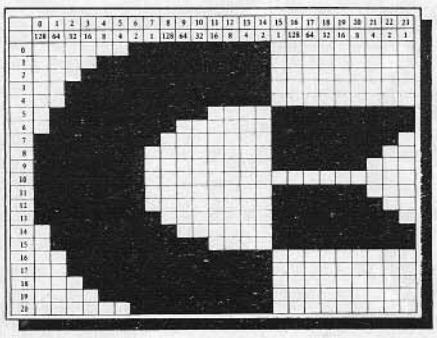

Figure 2

This is because altogether there are only 63 data values, and 63 isn't a very convenient number for the computer to work with. So, a 64th number has to be added on the end, which doesn't specify anything, and is set to zero. To poke the BYTE data values into memory, you use a loop such as the one used in this program.

This sprite is stored in an area of memory from location 832 onwards. There is room for up to three sprites in this area of memory, starting at locations 832, 896, and 960.

The data values already written in this program just produce the Commodore symbol shown before. To produce your own design, just type in your data values instead of these ones (Don't forget the extra zero!!). Anyway, type in and run this program:

```
10 FOR A=0 TO 63
20 READ BYTE
30 POKE 832+A,BYTE
40 NEXT A
120 DATA 3,254,0,15,254,0,31,254,0,63
130 DATA 254,0,63,254,0,127,225,255,
127
140 DATA 129,255,255,1,254,254,1,252
150 DATA 254,1,248,254,0,0,254,1,248
160 DATA 254,1,252,255,1,254,127,129
170 DATA 255,127,255,225,63,254,0,63
180 DATA 254,0,31,254,0,15,254,0,3,254
190 DATA 0,0
```

Nothing happens, right? Wrong! You have now poked all your data values for the sprite into memory, and the sprite is now ready to be called up on the screen.

Here is the rest of the program which will display the sprite on the screen. Type in and run with the last program:

```
50 PRINT CHR$(147)
60 POKE 2040,13
70 POKE 53287,7
80 POKE 53248,180:POKE 53249,80
90 POKE 53264,0
100 POKE53269,1
110 POKE 53271,1:POKE 53277,1
```

This time you should see the sprite appear on the screen in a yellow colour. If

(continued on page 30)

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your sprite didn't turn out exactly how you wanted it, recheck your data values and see if you added up your BIT values correctly. If you do find a mistake, then just make the necessary changes to your data in the program.

You may be wondering what all those POKES in the second program do. Well, I'll explain them to you.

LINE 50: Clears the screen

LINE 60: Tells the computer the location that data starts at. Our sprite is stored in the 13th block of 64 bytes (13*64 = 832)

LINE 70: Sets the colour for the sprite. Our sprite is set to number seven, which is yellow, but you can change the number to whatever colour value you like.

LINE 80: Is the screen co-ordinates for where you want the sprite to appear on the screen. The horizontal co-ordinates are controlled by location 53248 for sprite zero, 53250 for sprite one, 53252 for sprite two, etc, going up in even numbers. The vertical co-ordinates are controlled by location 53249 for sprite zero, 53251 for sprite one, 53253 for sprite two, etc, going up in odd numbers.

The vertical co-ordinates can be any number between zero and 255. The horizontal co-ordinates are a bit more difficult, because there are a total of 512 locations across the top of the screen. The 64, being an eight bit computer, can only handle poke numbers from zero to 255. So, what the computer does is divide the screen into two halves, and you determine which half of the screen you want the sprite to appear in. You then poke a number between zero and 255 in the side of the screen you have chosen.

LINE 90: Chooses the right hand side of the screen for your sprite. If you decide that you want your sprite to appear in the left hand side of the screen, change the poke to 53264,0.

LINE 100: Turns on the sprite

LINE 110: Expands your sprite to twice its width and twice its height.

If you don't want your sprite expanded, then change the pokes to 53271,0 and 53277,1.

If you have had a bit of an experiment with your sprite, you will have noticed that you can't write over it, use INST/DEL to delete it, clear the screen to get rid of it, or even scroll it. This is because sprites are controlled by the VIC chip, and can only be removed by using the RUN/STOP and RESTORE keys.

Well, that's about all I've got to say about basic sprite programming. I hope you find them useful, as they can, when used properly, turn out to be one of the most powerful programming techniques on the Commodore 64. ❑

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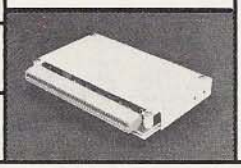

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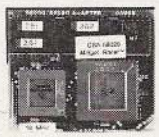

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The trials & tribulations of an Amiga Basic novice

by R. W. Daley

This article is in no way a tutorial or source of information, but a reassurance to others caught in the quagmire of Amiga learning that they are not alone.

IN THE TEN months or so of being an Amiga owner I have often had moments of frustration and doubts of my own intelligence. Perhaps my major saviour has been the occasional article or chance meeting that reveals that others have or have had the same experience. So with a feeling of self-sacrifice, I willingly expose my own fallibility for the good of the psyche of others.

About four months ago, after finally coming to terms with the machinations of Workbench etc., I decided it was time I turned my attention to the Extras disk. To be exact Amiga Basic. (If Commodore had to supply basic, couldn't they have at least made it a compiler?)

As I think most people would do, I first turned to the manual supplied with the software. Well, what can I say? This manual is thick and it does contain a lot of information. However to those such as myself, with no background in Basic, as an introduction to basic programming this book makes a good paperweight. Considering the complexity of the Amiga and the corresponding sophistication of Amiga Basic I imagine even those with a basic background would find this manual inadequate.

I then decided the best approach was to leap right in and do a bit of "reverse engineering". This tried and true method has long been a favourite of both small children and top line engineers alike. The results have been as varied as the products examined, ranging from toys being reduced to their smallest components, to the rapid growth of postwar Japanese manufacturing.

The subject of my attack was to be a public domain *Speak & Spell* program with which I'd had some trouble. When the program was run the result was amazing, the speech was something akin to a rooster with its neck stretched and totally unintelligible.

With a deep breath and little else I began to decipher the listing. Fortunately the original programmer had had the decency to include descriptive comments. Almost immediately I found the cause of the squeaky voice. Somewhere along the P.D. trail the "SAY" command parameters had been altered. By returning these to the default values the mostly intelligible Workbench voice was restored.

After this initial success followed by several weeks of tinkering, (only a couple of hours a week, I'm not fanatical about this computing stuff), I thought I was winning. I was wrong. The one thing I had forgotten was the diabolical humour of the inner sanctum of Commodore, for what I am about to reveal to you can only be an attempt at humour by some twisted mind.

Libraries

● With a sense of bravery exceeding my competence, I was looking through the book *Amiga Tricks & Tips* and found a program to make "borderless" Basic windows. This seemed like a good trick, so I typed it in as a subprogram. The program immediately spat the dummy with a "FILE NOT FOUND" display and indicated the line - LIBRARY "intuition.library".

At this point my confidence was such that I thought "Ah good! now I'll find out about these library things." So off I went back to chapter three of *Tricks & Tips* to learn about the Kernel commands and all good stuff it is too. In just two pages this book explains what the kernel is, what a library is and what you need to have so that Amiga Basic can use these libraries.

What it boils down to is that you need a .bmap file of the library and the book happily informs you that "You can easily create the necessary .bmap files using the convertFd program on the Extras diskette from Commodore Amiga", but does not elaborate.

With my confidence still intact I turned to the section in the Amiga Basic manual on calling library routines. This is where the horrible truth is revealed. Commodore have supplied the Amiga with a Basic that can call machine language routines within the operating system, IF the correct files are available to the program.

These files are required to be in the .bmap format, but with Commodore's convoluted logic they have supplied these files in a format for use with assembler or C languages. In lieu of the correct files a Basic program, convertFd, is supplied to convert the .fd files to .bmap files. This program is accompanied by Commodore's usually inadequate instructions and as a result I have spent about four unsuccessful hours trying to make it do something, anything.

At this point I felt some therapy was in order, so I plugged in a games disk

(continued on page 36)

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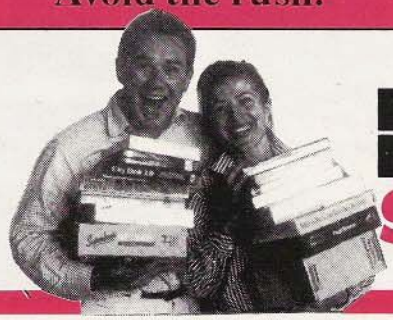

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and blasted a few thousand alien invaders, but gratuitous violence was not the answer. Resigning myself, I turned off the computer and headed for the lounge room. My wife looked up and said "Finished playing with our toy, have we?" Wives can get very royal when left on their own. The cat looked up with one of those looks only cats can give. You know the one ... it says "Hmff, can't even open a library routine, eh? I could tell you but I'm not going to."

So there I sat watching The Comedy Company, contemplating the meaning of life, the universe, Commodore logic. Why supply Basic with a computer the standard of the Amiga? Why not at least a Basic compiler? Why in a book on Basic do they tell you that "parameters are passed by standard C-language conventions"?

Kylie Mole flicked onto the screen. Somewhere in the world, somebody knows all about .bmap files. No, that's wrong. All over the world thousands of people know about .bmap files. Probably half of them illiterate teenagers unable to use lend and borrow in the correct context, using the word "got" as every second adjective. All of them using .bmap files willy nilly just to make me feel inferior. Have you ever noticed how computing can induce raving in otherwise normal people?

Well, look at that, Colin Carpenter's in the army. Perhaps I'm missing something, there must be some common factor underlying Commodore's entire Amiga concept. Surely a large successful computer company must follow a logical stratagey. After all, logic is what computers are all about, isn't it?

Wait! The answer has just come on the television. Commodore must have sub-contracted the documentation and I know to whom. Bastards Incorporated.

So remember if you've been sitting there fuming about .bmap files or for some other reason feeling your brain has turned to jelly, it's not your fault. You're up against experts. Don't despair, people no smarter than you have met the challenge, but most importantly you are not alone. ❑

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AUSTRALIAN MADE

Z-80 machine language on the 128

by David Williams

THE COMMODORE 128 HAS two processors. One is the 8502. This is a superior model to the 6510 used in the 64, although they are both of the same family and use the same commands. It is this processor that is used to drive both the 64 and 128 modes.

The other processor is the Z-80A. This is used for CP/M.When the Commodore 128 is turned on, or reset, the Z-80 is active, and 4K of Z-80 ROM is used.

This checks for any cartridges in the expansion port (if so, 64 mode is enabled, and then the 8502), if the commodore key is held down (this does the same), the CP/M boot disk is checked for, some memory is moved around, and the 8502 is enabled, and control passed to it. The Z-80 has stopped at $ffed, and so if it were to be re-enabled, it continues from the routine at $ffee.

Located here is a RST command, to perform a warm start of CP/M mode.The currently active processor is determined by bit 0 of the mode configuration register ($d505 in the I/O block). If this bit is clear, the Z-80 is activated. A set bit means that the 8502 is activated.

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So, how do we use the Z-80 in 128 mode? First we need a program. There is a free space at $0c00, and so it could go there. The following simple demonstration should give you an idea:

```
$0c00 3e 48  ld a,$48$
0c02 32 0b 0c ld ($0c0b),a
$0c05 3e 49  ld a,$48
$0c07 32 0c 0c ld ($0c0c),a
$0c08 c3 e0 ff jmp $ffe0
```

This just puts the values $48 and $49 in the bytes after the jmp command, and then performs a jmp $ffe0 - this is the routine that enables the 8502, and so takes us back to where we left off. However, the monitor in the 128 is for 8502 mnemonics only, so to enter this, the M command must be used.

```
m 00c00 >00c00: 3e 48 32 0b 0c 3e 49 32>00c08: 0c 0c c3 e0
ff
```

Now, we must change the command at $ffee, or the normal RST command will be executed. A jmp $0c00 must be placed there.

```
m ffee>0ffee c3 00 0c
```

Okay, and now we must write a routine in 8502 code to enable the Z-80, and continue when the 8502 is restored.

This can be done by typing the following:

```
a 0c10
sei
lda #$d505and %11111110
sta $d505
nop
brk
```

This disables interrupts, and changes bit 0 of $d505, enabling the Z-80, which executes the jmp command, and then the routine to put two bytes into memory. The 8502 is then reactivated, and continues at the nop command. The brk leaves us in the monitor, so to start :g 0c10. The computer returns instantly to the monitor, so read memory locations $0c0b and $0c0c, and you will see they contain $48 and $49, respectively.m 0c0b

A simpler way of calling the Z-80 is to call the routine at address $ffdi in 8502. To return to the 8502 from the Z-80, use the routine at $ffe0.

So, more evidence as to the flexibility and power of the 128. You may wonder what use this has, but it makes converting Z-80 programs much simpler. The Z-80 is also a faster processor than the 8502, among many other uses. Have fun! (If that's the right word!) ❑

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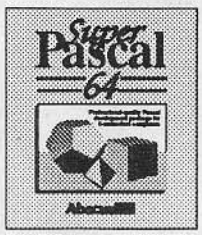

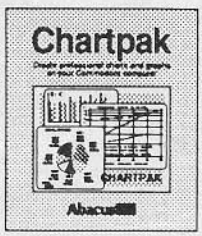

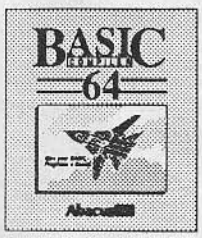

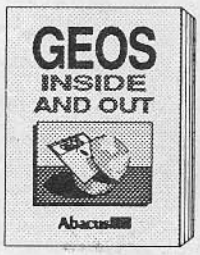

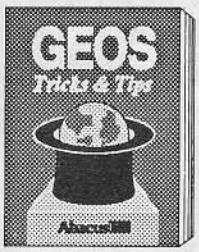

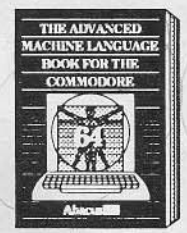

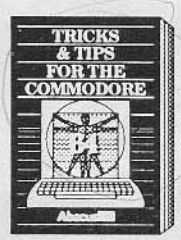

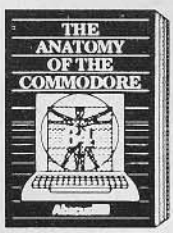

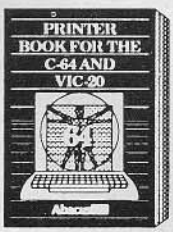

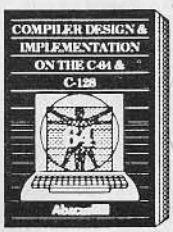

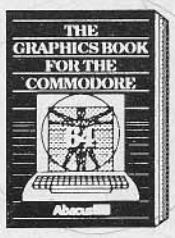

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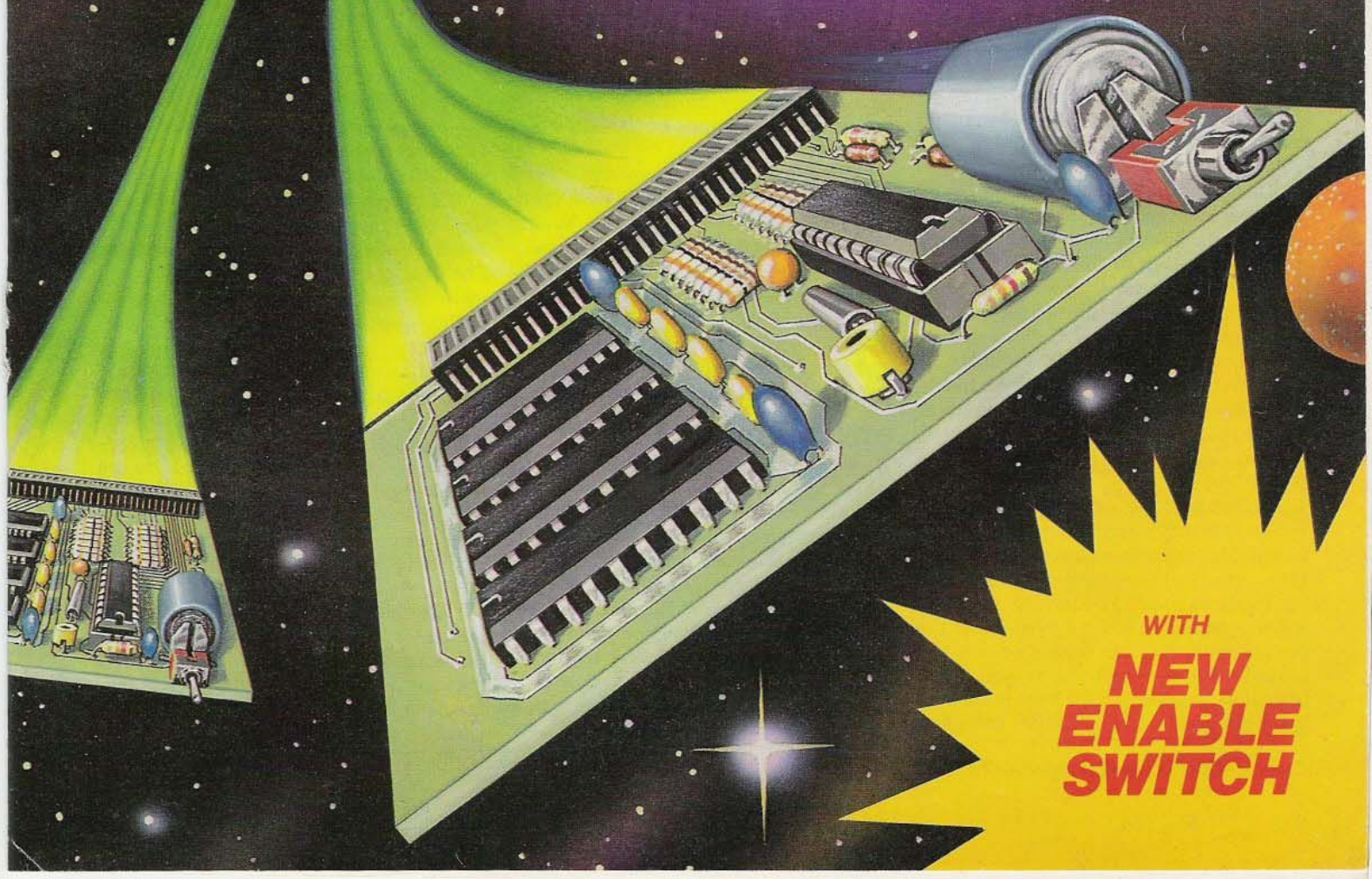

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Tired of BASIC? Try Power C.

by David Fong

COMMODORE 64/128 owners are perhaps aware that many Amiga programmers do not discuss BASIC or machine language, instead they use "C". This is not at all unusual, considering that major movies (*Star Wars, Star Trek)* programmed their special effects in C, and major software developers, such as Microsoft, are writing their code in C.

It is only natural that C suits the Amiga, but Commodore 64/128 owners need not feel left out of this trend. Two version of C are available to Commodore 64/128 owners: *Super C* by Abacus and *Power C* by Pro-line (distributed by Spinnaker). Both versions are nearly standard Kernighan & Ritchie (not ANSI) implementations of the C language. It is *Power C* that is reviewed here.

Power C includes both Commodore 64 and 128 compilers in the same package (Note: "compiler" is a program that changes a program permanently into machine language. This contrasts with "translater" or "interpreter", which converts programs into machine language every time the program is run - eg: BASIC).

This package, which includes a 60 page manual, costs $70 in Australia. This compares favourably with *Super C*, which costs $86 for each of the 64 and 128 versions. What *Power C* doesn't include, which *Super C* does, is a teaching manual. Once upon a time, *Power C* did include a manual, and cost $US100. Frankly, I would rather choose my own textbook, rather than have one imposed upon me at a cost. As a matter of interest, *Power C* used to come with *C Primer Plus*, by the Waite Group.

I purchased the second edition of this book separately and have found it very useful. However, there are no doubt programmers of different abilities to my own out there, so I feel Pro-Line are correct in leaving the choice to the buyer. *Power C*'s clear manual includes details of memory usage and library routines, as well as the obligatory explanation of how to use the main programs (shell, editor, compiler, linker) provided.

The *Power C* programs come on two double sided disks, one for the C64 and the other for the C128, and is not copy protected.

Typing in a C program

● One cannot simply use the BASIC editor provided and call up the C compiler to do its job. C does not use line numbers, although lines can be "labelled". C also makes use of special characters, such as curly braces and tildes.

Pro-line have provided their own editor, which features such basics as search/replace, insert/delete and cut/paste. Program lines tend to be short in C, but even so, the editor horizontally scrolls over 240 columns, allowing detailed comments and the occasional mathematical monster. Special keypresses have been define to allow the programmer to quickly move through the program. When comparison and cut/paste between two program blocks are required, buffers can be created allowing separate program blocks to reside in memory. Two versions of the editor are provided.

The simpler ("ED") provides all the vanilla functions mentioned. The slightly larger ("CED") also provides a syntax checker. Since compilation can take place over a few minutes this feature is invaluable to prevent "stupid" bugs, leaving more time to solve more serious logical errors.

A change of environment

● Editor, compiler and linker are all called up from a special environment provided by Pro-line. Since only programmers are using this environment, Pro-line have wisely chosen an environment that suits programmers, Unix. This little wonder allows such luxuries as redirection and command line arguments. Redirection allows programs to derive input from a disk file, or send output to a disk file, as if the disk drive was a "keyboard" or a visual display unit.

Command line arguments allow a user to set options whilst actually calling the program. Such options may include "two disk drives are in use" or "printer is device number 5". These options can have a default value, so a user with one disk drive and a printer with device number 4 doesn't need to worry about such "arguments" at all. In addition, the Commodore 128 version of the shell includes a RAM Disk. 191 blocks are provided shared between two disks. This allows much faster compilations and so on, as the bottleneck of disk drive speed is practically eliminated.

In case you haven't guessed, *Power C* comes only on disk, and cannot be used by a cassette-only system. The Commodore 128 version takes advantage of the 1571's extra speed. The Commodore 64 version uses vanilla 1541 loading, but can take advantage of fast load cartridges such as "Warpspeed".

Compiler

● The real guts of the package is the compiler. *Power C*, like *Super C*, does not understand bit fields, a way of arranging true/false statements.

Of course, logic variables can be simulated with simple integers. Otherwise, the *Power C* compiler is very good indeed. The 64 version is able to produce code a mere 53% slower than the equivalent written in pure machine code! (see Figure 1).

Sad to say, this miracle is dampened by a bug in the 128 version. Apparently, the 128 compiler incorrectly converts floating point to integers! This very serious flaw is not present in the 64 version (thank goodness), but it severely detracts from the usefulness of the 128 compiler. I have written to Pro-line and Spinnaker regarding this problem, and eagerly await a reply.

128 owners can use the 128 version of the editor/compiler to take advantage of the ram disks during debugging, and then use 64 mode to run the finished program. In 64 mode, 128 owners can turn

on 2MHz mode, enabling 128 users to run C faster than a 64 can run machine language!

Linker

● A feature of C that may seem quite unusual to BASIC programmers is the necessity to "link" programs before use. In fact, this is a very useful feature. "Linking" involves tying the code produced by the compiler to other bits of code produced by the compiler, as well as to library functions (such as maths, or disk I/O).

This allows the compiler to only compile a small amount of the program at a time, and for special libraries (such as graphics, or statistical mathematics) to be built up which can be re-used easily in different programs. Whilst the advantages of the latter are obvious, the former may require explanation. I have written BASIC code that has exceeded 25K in length. Sad to say, it takes ages to find code that needs to be changed, making the programming process considerably less pleasant. With a linker, one can concentrate on small chunks of code one at a time.

This is rather like having work arranged in a filing cabinet rather than strewn all over the desk. Whilst a small amount of discipline is required to keep everything in its place, the net benefit is well worth the trouble.

Libraries

● The reader may have noted that the aforementioned libraries will affect the usefulness of the program. The *C Power* library is an attempt to imitate the Unix library, and includes many standard functions familiar to C programmers. These functions are mainly concerned with I/O functions to screen, printer and disk as well as maths functions, such as trigonometry. One alarming omission from the 64 library is the "poke" function. Fortunately, this is easily rectified.

Program 1 and Program 2 are my solution to the problem. Machine language access is catered for in both versions, allowing the passing of A,X,Y register contents.

Conclusion

● *Power C* produces stand alone programs that can be run from BASIC. If compiler options are used, SYSable programs that start at any address can be created, and memory usage can be dictated. There are problems with *Power C*, the 128 floating point to integer conversion flaw being the most serious. Indeed, there are problems with C as a whole to BASIC programmers, as time needs to be spent when using C to do the mundane tasks of compiling and linking. However, blinding execution speed is the payoff, resultant programs being 15 to 50 times faster than BASIC (Brannon 86 and PLATO 87).

In addition, C is a fully structured language allowing extensive control over variables and functions. Strangely enough, one possible market for *Power C* would be Amiga owners. Almost all technical manuals and serious Amiga reference books will assume that the reader is a fluent C programmer.

Despite this, some programmers would probably prefer to program the Amiga in machine language, Pascal, Modula-2 or some other language. These

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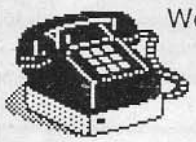

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people are obviously at a disadvantage; in order to understand the Amiga, they must understand C, but like any other language, understanding comes only with use. With C compilers for the Amiga costing around the $500 mark, some Amiga programmers are going to be forced into using C exclusively, even if they don't like C. *Power C* removes this restriction, by allowing Amiga programmers with a Commodore 8-bit computer to use C at far less cost.

This also applies to those who want to use C now, but are still saving pennies until they can afford an Amiga C compiler. Overall *Power C* is an excellent purchase, and Commodore 64/128 owners need not feel left out of this exciting language.

References

● Interested readers may like to read different views about *Power C*, and its competitor *Super C*.

To these readers I suggest:

Evers 1985 - "C Power: A Users Review", The Transactor. Nov 85, Volume 6, Issue 3. Brannon 1986 - "Another Look at C", Compute!"s Gazette. Jan 86, Issue 31, Vol 4, No.1. Note that both Evers 1985 and Brannon 1986 reviewed the old version of "Power C", titled "C Power". Since then the Commodore 128 version of the program has been written and the manual extensively revised.

Herst 1987 - "A Tale of Two Cs", The Transactor, Mar 87, Volume 7, Issue 5. Not that this is a comparative review and includes a review of "Super C". "C Power" is still "Power C" at this stage. I suspect the "C Power" manual has been revised since 1987.

PLATO 1987 - "A Comparison of Language Speeds", The Transactor, Mar 87, Volume 7, Issue 5. An interesting article, regardless of what language you are interested in. Power C (64 version) clocks in the fastest out of 20 languages, being only 53% slower than machine language. Super C (64) was 6th fastest, not including machine language, being 519% slower than machine language. The test program is the venerable Erastothenes Sieve, used to find the first 1000 primes.

Rose, 1987 - "A Dissenting Vote, for C Power", The Transactor. Jul, 87. Volume 8, Issue 1. Herst believed "Super C" to be superior, due to better documentation (ie a C language teaching manual) and larger libraries. Rose disagrees, arguing that "Power C (still "C Power" in 1987)" produced faster and smaller programs. I feel speed and code size are more important considerations to programmers, so I tend to agree with Rose, although I haven't used Super C myself.

Figure 1.
From PLATO 1987
Test: Erastothenes Sieve.

Finds first 1000 primes
Machine: Commodore 64, 1MHz

	Primes printed	No print
Basic 2.0 -	11:36	8:10
Super C -	3:18	2:58
Power C -	0:49	0:37
Assembler -	0:32	0:26

Power C is available from Briwall Australia for $70.

Tips for Power C users

● Commodore 64 users have enjoyed a full screen editor for so long that it is difficult for them to realize that many computer systems do not enjoy this basic feature. *Power C*'s shell appears to be one such system. Hasler (Transactor, May 1987) indicated that this was not the case.

If you wish to edit a line, cursor up with the standard cursor keys and correct the line, but don't use RETURN straight away. Move to the line above and hit RETURN to move the cursor down to the corrected line, and then hit RETURN again.

This is an undocumented "feature", and so should be exercised with caution (assuming that programmers have any).

Though not mentioned in the manual, the *Power C* disk comes with a library maintenance program. This is provided in source code, and so has to be compiled. The C64 version works perfectly, but the C128 version crashes whenever a "Press key to continue" request pops up. A quick look at the source code explains why. The 128 code is basically unchanged from the 64 version! This proves fatal when the single SYS call is made to a KERNAL routine. The C128 compiler requires a bank number to be supplied whenever a SYS call is made, whereas the 64 version does not. The cure is simple. Load up the program into an editor and set up a search for a SYS call (there is only one). Change the call to conform to the C128 format, as is described in the manual. After this short change, the library maintenance program works perfectly. ❑

Poke and Peek code for Commodore 64 Power C

C code, compile to and object file and place in a library.
'Link' into your own program when required.

```
poke (address,value)
unsigned address,value;
    +
    char    add_lo = address & 0xff;
    char    add_hi = address / 0x100;     /* low and high bytes of address */
    char    v = value;                    /* convert value into char type */
    sys     (0xc000,&v,&add_lo,&add_hi);
    return;
    i

peek (address
unsigned address;
    +
    char    add_lo = address & 0xff;
    char    add_hi = address / 0x100;     /* low and high bytes of address */
    char    value;
    sys     (0xc010,&value,&add_lo,&add_hi);
    return (value);
    i
```

Machine code portion

```
c000    stx $c007           ;poke
c003    sty $c008
c006    sta $d030           ;note, $d030 is a 'dummy' value
c009    rts
c010    stx $c017           ;peek
c013    sty $c018
c016    lda $d030           ;note, $d030 is a 'dummy' value
c019    rts
```

There is no doubt a more elegant way to do this in machine language, but I don't use C instead of machine language for nothing! Most people with some knowledge of machine language will easily be able to relocate the above code to suit their own purposes.

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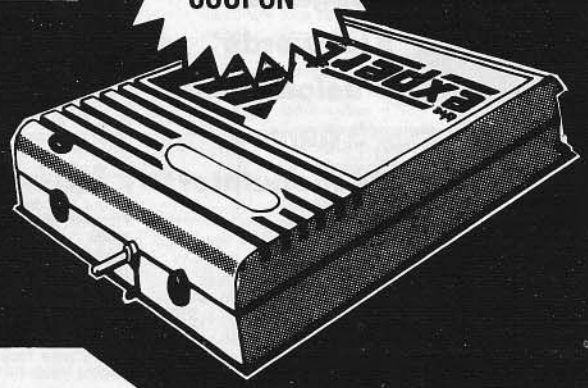

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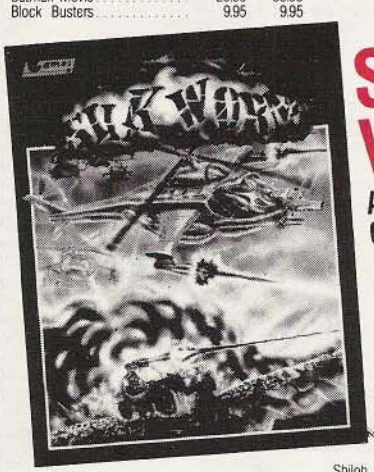

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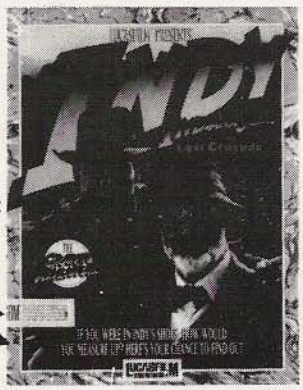

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Assembly Language Tutorial part 2

by Oben Candemir

THIS MONTH WE are at a level where we can learn some new commands. Remember from last month that the main principle of programming the Amiga in Assembly language is that of memory management, and moving values in and out of memory locations.

We had discussed the concept of memory in a generic and then in an Amiga specific way. This month we'll see why memory is so important and how we can do things using the processor's native 'language'.

When we discussed the Amiga's memory last month you will recall that I didn't say much about how to use memory. I will now go on to demonstrate the concept of 'Memory Locations'.

Now it's fine to say that the Amiga has 512K of memory; but where is that memory? What use is it to us if we don't know where it is? For this reason memory has a dual nature, that is that it has two parts which are equally important.

Firstly, each basic unit of memory has what is known as an 'ADDRESS'. This part of it is essential for us to be able to utilise that memory. The 'ADDRESS' is what we use to find that memory location and is exactly analogous to normal everyday post addresses. To get to a house you must first have the address!

Now it's no good just having 512K of addresses in memory; that way we'd be able to access all of the memory's locations but have no way of storing something there. And just as every post address has a house to it in which things are stored, so every memory address has a single byte of storage place associated with it. In this manner we can both access memory and write to it.

Take the following as an example. Just say that I wanted to store the value $ff in the first location in memory. I'd go about it by 'finding' the first location in memory and then 'moving' the value $ff into it. You should aim to get familiar with this concept of 'moving' values into memory.

By then accessing subsequent memory locations I can fill the whole of memory with the value $ff by 'moving' it there. This leads us to our first command. The MOVE command.

MOVE - the fundamental building block

● As its name suggests this command moves values. It is easily the most commonly used command and must be tackled first. To make it easy to understand how the move command works let's take an example in BASIC.

Say I wanted the value 7 to be put into the variable X. I would write something like: LET X=7. I wouldn't worry about what the computer had to do, to do what this instruction says. All this does is retain the value 7 in the variable X which in actuality is just a memory location.

In assembler the same effect can be achieved by directly storing the value 7 into either a data or address register, or I could store the value directly into memory somewhere. So I'd write something like:

```
MOVE.B #$7,$1000
```

The '.B' specifies that only a byte value is to be moved. I could equally put '.W' for a word value which would move $0007 (note how the computer would complete the digits) or '.L' for a long word value which would move $00000007. The '#' means that I want to store an immediate value into the memory location $1000.

The end result is a 7 deposited in location $1000. However when the Byte value is moved only location $1000 is involved in the operation; moving the word $7 means that location would hold $00 and $1001 (the next byte) would hold the $07 part.

Therefore one must be careful with the 'size specifier'. If no specifier is supplied most assemblers default to word values. So this is the immediate mode, there is another called the absolute mode which is:

```
MOVE.B $7,$1000
```

Note how we've omitted the '#' meaning that we don't want the immediate value of seven stored but rather we want one byte of what's stored in location $7 to be moved to location $1000. There really is a big difference between this and the previous mode and I hope that you all understand the difference.

Had the value at location $7 incidentally been a 7 then the instruction would have had the same effect as the first. We'll see examples of how to use both the modes of addressing later, for now let's see more modes. But to understand these other modes we must first see what registers are.

REGISTERS - the 68000's personal workspace

● We've already seen that the Amiga has RAM which is accessed by the processor through the BUS. In addition to this RAM the 68000 has internal memory called registers.

There are eight data registers D0 - D7, eight address registers A0 - A7, a status register SR, a user stack pointer USP and a system stack pointer SSP, and the program counter PC. This multitude of terms may be confusing for now but all will be revealed soon.

The data registers

● The data registers are general purpose memory and can store any size of value up to 32 bits. The main use of the registers is that they offer temporary storage to do operations on values.

The most significant advantage in the use of registers is that they carry no extra time overhead like ordinary RAM which is accessed through the Bus, and the use of registers is greatly rewarded in terms of speed. In fact most of the time you are storing, preserving and manipulating values in these data registers. In assembly we have eight data registers to work with. They are used as D0, D1, D2, ..., D7.

The address registers

● The address registers like their data

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counterparts are eight in number. However the last address register ie. A7 is used as the Stack pointer and should not be used otherwise by the programmer.

The other registers may be used to manipulate and store addresses in and are generally used as pointers to data in memory, and their many modes of addressing give extra flexibilty to the coder. As the data registers were the address registers are named A0, A1, A2, ..., A7.

The Stack and the Stack Pointer A7

● The Stack is a place of large scale temporary storage. It resembles a stack of papers on your table; the last one put on is the first one to come off. This is called a LIFO type stack (Last In First Out). There are other types but we won't concern ourselves with those as the 68000 only uses the LIFO type.

When we use the stack to store things we must be careful to make sure that we take off what we put on! This is because the system also uses the stack, to save return addresses when jumping to subroutines. Saving and restoring values on the stack is commonly referred to as 'PUSHING' and 'POPPING' to/from the stack respectively.

Another point of warning is that the stack generally shouldn't be used to save byte values, the reason for this is that when accessing words and long words the 68000 expects EVEN addresses (ie. the last digit must be 0,2,4,6,8,a,c,e). Pushing one byte onto the stack makes the stack's next address odd, and when the system attempts to access the stack next it has a strong possibility of crashing!

This applies to ALL addressing regarding words and long words not just to the stack. Assemblers usually have a directive to align the current address to an even address. It usually performs this by padding the odd address with a zero.

On the Seka Assembler which I use that command is 'EVEN', on the Meta-Comco assembler it's 'CNOP 0,2' and on the Assempro it's 'ALIGN'. If yours isn't any of these then consult your manual for this function.

With that cleared up we can go on to the other important addressing modes. There is the 'data register direct' which is:

```
MOVE.B #$0A,D0
```

Note that this is the same as the immediate mode above except the destination for the move is a data register. The same is possible for an address register and is called 'address register direct':

```
MOVE.L #$00060000,A0
```

Probably the most important way of using an address register though is 'address register indirect'. To explain this let me draw on an example. Say that location $1000 had a $07 stored in it. I could access this in a 'direct' way as:

```
MOVE.B $1000,D0
```

This moves the value in $1000 (which is $07) 'directly' into D0. There is another way though:

```
MOVE.L #$1000,A0  ;Move address $1000 into A0 MOVE.B

(A0),D0  ;Move what's 'inside' $1000 to D0.
```

The brackets indicate the 'indirect' mode. Without the brackets the instruction would read MOVE.B A0,D0 ; that would simply move the address $1000 into D0. What we wanted was the contents or what's stored in the location which A0 holds (ie. $1000). And the brackets simply mean just that, that we want the value stored in $1000 to be moved into D0 not the $1000 itself.

Read over this a couple of times if you have to, because it is extremely important for later on. Note also the ';' which can be used to write a comment after the instruction for handy little reminders later on.

A variation on the indirect mode is using an 'offset'. An offset simply is a value with which to increment the address before using it. Take the above example with an offset:

```
MOVE.L #$1000,A0 MOVE.B $20 (A0),D0
```

This will do much the same as the previous example however, it will access the memory location $20 (decimal 32) bytes further than $1000. So in fact $1020 is the effective address accessed. This is specifically called 'Address register indirect with a 16 bit displacement value'. (Don't worry too much about the names as long as you understand the concept.)

On top of this mode we have another rather infrequently used mode which is 'address register indirect with an 8 bit index value'. What this means is that in addition to the 'offset' as before we can have another data register added to the address:

```
MOVE.L #$1000,A0 MOVE.B $20 (A0,D0),D1
```

This would add $20 to A0 and ALSO and eight bit value in D0 to the effective address. Say D0 contained $10 ; then it would access memory location $1030. This is $20+A0+D0.

Note that with an 8 bit value only 255 can be added in this manner. Also note that if the 'offset' of $20 isn't needed then you can replace it with 0! Easy eh?

There is another variation on this theme called the 'program-counter relative modes' but I think these are best left till after. The last two modes I want to mention here are the 'address register with post increment' and 'address register indirect with pre-decrement' modes. Two examples will demonstrate these aptly:

```
MOVE.L #$1000,A0 MOVE.B #$01,(A0)+
```

The plus here just means that the address in A0 should be incremented by one after writing an immediate $01 to $1000. So A0 would be left with the value $1001. The other way is:

```
MOVE.L #1000,A0 MOVE.B #$01,-(A0)
```

This would write a #$01 AFTER A0 was decremented by one so that the value would actually be moved to 999 (note the use of decimal here which is perfectly legal). I think this is simple enough and in fact enough for addressing modes for now.

One last point on this topic is that the latter two modes are used in management of the stack. For example:

```
....          ;Start of program

MOVE.L  #$ffff,-(SP)     ; "PUSH" onto the stack

....          ; Other stuff in here.

MOVE.L  (SP)+,D0          ; "POP" a value from the stack.
```

I think that this will make sense to everyone who has read the preamble. I want to finish off by giving you an actual program example which I'll elaborate on next issue.

Here goes . . . type in the program in a text editor or whatever you use and assemble it with your assembler (I assume that you've read your manual and are familiar at working it; if you still have trouble working the assembler then write in

a letter explaining your difficulty and I may be able to help):

Color Flash!
by O.Candemir for ACAR Magazine

```
Start:
LEA      $DFF000,A5
MOVE.W   #$0020,D1

Loop:
MOVE.W   #$FFFF,D0

Flash:
MOVE.W   D0,$180(A5)
DBRA     D0,Flash
DBRA     D1,Loop

End:
RTS

; End of code
```

Don't worry about the particulars of the code but try to recognise the modes and instructions we've learnt. More explanations next month and remember that "Practice makes Perfect". Cheerio! ❑

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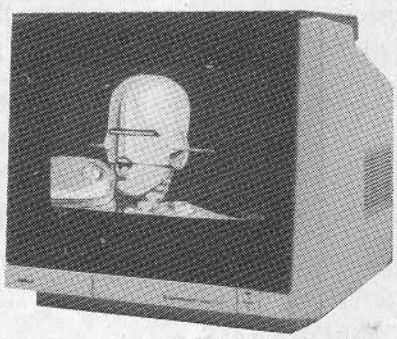

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CLI for beginners

by Tim Strachan

CLI examples for beginners

● THESE EXAMPLES ARE designed to give a start to anyone who is interested in getting into the CLI (Command Line Interface) or Shell. When you're through playing games, the CLI is a fascinating place to delve. To enter a CLI simply double-click on the CLI or Shell icon on your Workbench disk. When typing in the commands, make sure you type them exactly as you see them. For much more detail on all of these matters, see the Megados AmigaDos manual-on-disk.

Setting up a RAM DISK

● Particularly handy for those with a single disk drive, it will allow you to access CLI commands without having your System disk (bootup disk) in the computer, thus freeing up a precious disk drive, though taking up about 60Kbytes in the case below. You can of course copy more or fewer commands than written below, but these are the most often-used commands. Hit <Return> after typing in each line.

```
makedir ram:c
cd df0:c
copy run|copy|cd|dir|list ram:c
copy delete|execute|type|info ram:c
path ram:c add
```

A simple way to create a Batch File

● Note that you should also create a Batch File of the lines above, so that you don't have to type them in again each session. To do so, first enter:

```
copy * to df0:s/Ram disk <press Return>
```

[You will now have a line without a Prompt appearing. Type in the 5 lines above, each on its own line, and when you've pressed <Return> at the end of the 5th line, press the CTRL key together with the "\" key at the top right of your keyboard. This will bring your Prompt back, meaning you're back in the CLI as before.]

Now when you want to set up a Ram Disk in any session, simply enter:

```
Execute ram disk
```

This technique is really the equivalent of a text editor, allowing you to create Batch Files, write notes to yourself, or, to knock out quick notes or envelope addresses on your printer, redirect your typing to the PRT: DEVICE, as follows, making sure your printer is set up:

```
copy * to prt: <Return> Megadisc
P. O. Box 759,
Crows Nest  2065
```

and then again, press CTRL-\ to exit this mode. ❑

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MAX: 1:12:4

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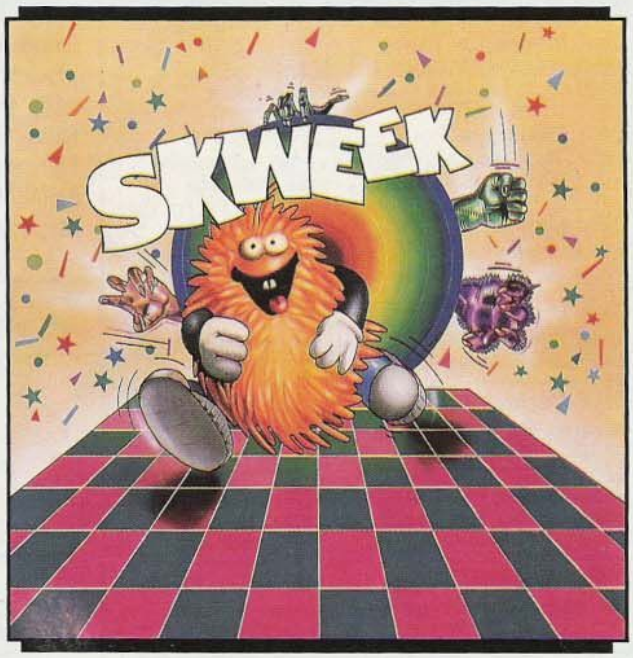

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What the new enhanced chip set (ECS) will do for you

● Specifically, the ECS will consist of the 1 meg Agnes (already discussed in that article), and the new Denise chip. The Agnes will support rectangular blits (ie movements of graphics due to the "Blitter") of up to 32K x 32K, meaning better graphics, to keep it comprehensible.

The Denise chip will provide new screen resolutions and more Genlock capabilities.

● SuperHires mode: will give you 1280 horizontal pixels on a standard display.

● Productivity mode: will give you 640 x 512 (or more) non-interlaced screens with up to 4 colours on a multi- or bi-sync monitor. All the current modes will still be supported.

Denise will also allow four Genlock modes:

● CHROMAKEY, allowing any colour register to control the video overlay (as distinct from colour 0 only at present)

● BITPLANEKEY, allowing any bitplane to enable video overlay

● BORDERBLANK, creating a transparent "frame" surrounding the active area of the screen

● BORDERNOTTRANSPARENT, making an opaque surrounding the active area of the screen.

Hi res colour graphics card

● Said to be in the pipeline, called the A2360, will give resolutions up to 1024 x 1024 with up to 259 (3 extra over VGA) colours on screen simultaneously. Features the Texas Instruments TMS34010 graphics processor, executing commands up to 6 million instructions per second (!). Palette of 16 million colours available, an high-speed DMA used to move images and commands from the Amiga to its 1.5 meg of memory. Will require an A2000 and a multisync monitor.

Professional video adaptor

● This is a combination genlock, frame grabber, and digitizer. There could be a professional paint program coming to take advantage of the features of this board. The PVA will require an A2000.

More on 2090 hard disk controller problems

● While Commodore is refusing to allow an upgrade from this to an 2090A, they are going to sweeten the pill. The 2090 won't autoboot even with the 1.3 OS available, so they're bringing out a board with an autoboot ROM that will look for the 2090 and then boot from it, taking up an A2000 Amiga slot in the process. ❑

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The Mega Entertainment Section

Edited by Phil Campbell

That's Entertainment

A round-up of this month's entertainment news and views.

Bombuzal short story competition winner

● Hidden away in the October issue was a little competition. Readers were asked to turn the list of secret pass-codes from *Bombuzal* into a short story. We had heaps of entries, but sadly there could only be one winner. Congratulations to Damian Spruce of Paddington, NSW, who is now the proud owner of a copy of *Dark Side*, kindly donated by Questor. Damian contributed the following gem.

"Oh ROSS you RATT!" said LISA, who had never been good at spelling. "I SINK you're overweacting," replied DAVE. He was so embarrassed at his speech defect that he leapt onto his BIKE of IRON, grabbed his pet BIRD who was on a LEAD, put a tape in his walkman and set out for home.

As he pedaled homewards he saw a WEED which he ran over, a VASE, which he left alone, and a valuable RING, which he took. "You PILL!" said the GIRL from whose hand he had taken the ring. "I won't move from this SPOT until you return my GOLD." As he rode away she threw a PALM tree, missing him, but dislodging an OPAL from the ring.

When he got home he put the ring under LOCK and key, singing a SONG of relief because he knew it was SAFE. He gave his bird a WORM for being good and lit his LAMP so as to read. He saw an advertisement in the ACAR which offered speech therapy in return for a gold ring. He smiled and decided he'd go there tomorrow.

Amazing space ace demo

● The sequel to *Dragon's Lair* is nearly upon us, and all I can say is "WOW." I've just been watching the *Space Ace* demo, and if the game is even half as good then it's a definite winner. With full screen animation and dramatic sound effects, the demo disk is only a whisker below the standard of the cartoons you watch on TV. Let's hope there's a bit more support for Amiga hard disk users this time though! SPACE ACE should be available by the time you read this. Don't miss it!

Batman C64 computer package

● Cashing in on recent Batmania and the Christmas rush Commodore have released a "Movie Pack". Included with the C64 are a disk drive, joystick and a software pack including *Batman*, *Ghostbusters* and Commodore's own "Productivity Package" (typing, word processing, filing and 12 utilities that are guaranteed to make the C-64 a "breeze" to use.) Look out for the Movie Pack at your local retailer.

World Sports Challenge package

● Couch Potatoes and Norms of the world take note! If the Batman pack doesn't grab you the *World Sports Challenge* package might. Along with a C64 comes a joystick and data cassette, with seventeen games that are guaranteed to keep you amused for months - they include Cricket, Basketball, Sprint Car Racing and an Olympic Games range.

It's still coming from the desert

● Mindscape's long awaited *It Came From The Desert* is still on the way - probably lost out there in the sand dunes. The official reason for the delay is that the game will be released with two "scenario" disks; you can play it two different ways. This is a great idea, as there is nothing deader than a completed Cinemaware game! Keep waiting - this one looks hot. ❑

Letters to the editor

How to reset

● I have a problem concerning the cheat for *Rygar* on the C64. What is meant by "RESET IT"? I have tried RUN STOP/ RESTORE and every other means I know to reset the program but have failed. Finally, I own a C64 and it pains me to see so many game reviews for Amiga only. Because of the good products available on the Amiga only, C64ers may need to upgrade or be left behind.

Mark Healy, Ipswich.

Ed: To "reset" your computer you will need a special button - there are a number of different types available, some built into fancy cartridges, others that simply plug in to your serial port. Try your computer shop, or look through your back issues of ACAR for information on how to build one. It's really very simple. I shouldn't say this, but you can also reset your computer by shorting together pins 2 and 6 of your serial cable with a paper clip or other suitable device. But DON'T BLAME ME if you try this and blow up half the chips in your computer! All I can say is that my system has survived all sorts of strange things - but maybe I'm just lucky. When you reset the computer - a "cold start" - you will be presented with the standard startup screen, as if you have just switched

High Scores

Amiga

Arkanoid - 976,548 Kamikaze Andy
Bubble Bobble - 1,009,000 Michael Scanlan
Denaris - 53,900 Peter Evans
Dragon Ninja - 105,030 R Zagami
Double Dragon - 116,204 R Zagami
Gee Bee Air Rally - 307,466 Kamikaze Andy
Hybris - 947,818 Kamikaze Andy
ISS - 1,420,450 G Smyth
Karate Kid II - 41,336 Owen Webster
Leatherneck - 83,300 Owen Webster
Major Motion - 50,658 Owen Webster
Menace - 996,481 Kamikaze Andy
Mindwalker - 306,214 P Schumacher
Mousetrap - 10,120 Craig Webster
Operation Wolf - 344,800 John Boyle
Outrun - 3,053,976 R Zagami
Offshore Warrior - 626,345 J Booth
Pacmania - 556,280 Ian Malcolm
POW - 106,065 R Zagami
Sidewinder - 385,800 Ian Malcolm
Silkworm - 913,700 A J Dunstall (Heli), 474,800 T Mason (Jeep). All 11 levels completed. Can you dig it?
Speedball - 10,335 GS and PS
Starwars - 2,296,786 Ian Malcolm
Sword of Sodan - 364,750 Kamikaze Andy
Test Drive - 96,841 Michael Scanlan
Tetrix - Level 100 Luke Tattersall
Typhoon - 54,255 Owen Webster
Whirligig - 7,428 Jonathan Scowen

Commodore 64

Bangkok Knights - 36,800 Nick Van Heeswyk
Bubble Bobble - 590,690 Chris Byrne
Fast Break - 136 to 9 Chris Byrne
Giana Sisters - 69816 Nick Van Heeswyck
Handball Maradona - Level M Nick Van Heeswyk
Ikari Warriors - 93,000 Paul Millward
Int. Karate - 113,700 Nick Van Heeswyk
Operation Wolf - 98,500 Chris Byrne
R-Type - 548,310 Nick Van Heeswyk
Robocop - 82,250 Tim Lockwood
Salamander - 235,300 Paul Millward
Street Fighter - 127,050 Chris Byrne
Target Renegade - 330,450 C Byrne

on. But never fear - your game program is still tucked away safely in memory, all ready to be modified by your POKE commands and restarted with "SYS".

Sorry about the reviews for Amiga only. What can we do? As programmers find out more and more of what the Amiga can do, the C64 is sadly left behind. We really do try to balance our coverage, but it is getting harder and harder. Start saving up for your Amiga - you won't regret it!

Pirates

● The magazine is looking excellent since the new entertainment section was included. There is now something for every reader.

I would have to say that *Pirates* by Microprose is one of the best games I've ever played. The whole game is so complex that I have become addicted to playing for up to five hours. I've compiled some hints for the game that should help beginners. Keep up the good work on an excellent section.

Paul Millward. Salisbury North, SA.

P.S. Have you thought of a classified section in your magazine? If used for the sale of computer hardware I'm sure it would boost reader participation and magazine sales. Also, the magazine's colour is a bit bland, can't colour reviews make it past the management?

Ed: Thanks for the hints and tips, Paul, and also for your suggestions about the magazine. Extra colour would be nice, I agree. Maybe one day ... ? Meanwhile, it's good to hear you're so keen on PIRATES - just make sure you get back to the real world every now and then!

Top Ten Chart

● How about a Top Ten Amiga/C64 games chart to show the best selling games across Australia. It's always interesting to see which games are performing well in the sales. Also it provides the buyer some indication as to the popular and good games (after all only good games sell, right?)

Andrew Phang, WA

Ed: Charts are a great idea. Check out our 1990 Amiga Annual (available soon) for top ten lists from every supplier. These are the games that have sold the most - but are they the best? That's another story.

Straight ASCII

● I've had an Amiga 500 for about a month now and I have really been getting some good use out of it. My friend and I have collected heaps of cheats and pokes for your magazine, and I hope you can use them in the entertainment section.

Also, would you be able to put colour pictures of some of the game screens, just to make it a little bit better? Last month was the first time I bought your magazine, and I really liked it, so keep up the good work. Finally, could you tell me what a straight ASCII text file is?

Nicholas Prokop
Berkeley Vale, NSW

Ed: Let's work backwards from the end. Most wordprocessors have the ability to save and load text in ASCII format, a standard common to almost all computers. All formatting, underlining etc is removed, but the text that remains can easily be transferred between computers. That's why we insist that all submissions on disk are stored as ASCII files - it makes it much easier for us to transfer them between our office computers.

As for colour screen shots, we'd all love to be able to do it. It's only the cost that is holding us back. We're glad you like the magazine, and we appreciate the pile of hints and tips. Some are in this month's issue, others will be used later. ❑

Amiga Hints and tips

AMIGA AMIGA AMIGA

Dragon's Lair

● Here's the next installment of Ted Albert's solution to *Dragon's Lair* - disks 3 and 4. Remember, Ted recommends using the keypad rather than the joystick for more positive control. Here we go.

Disk 3

● Whirlpools, Rapids and Cauldron (in either order).

Ye Whirlpools: When Dirk's boat approaches the whirlpool, go to the side with space to pass - either LEFT or

(continued on page 66)

Brilliant sequel to Outrun

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RIGHT. There are 4 whirlpools and the sides alternate, so your moves will be either LEFT RIGHT LEFT RIGHT, or the other way around.

Ye Rapids: If your first Whirlpool move was left, your first rapids move will also be left - and vice versa. After the whirlpools the sea goes red while the Rapids sign flashes. Wait for the sea to turn blue again - then, as soon as Dirk's boat appears (from the right) go LEFT - UP - Pause - UP.

For the next rapids, wait for Dirk again then go RIGHT, UP, Pause, UP.

Repeat for the next pair.

Cauldron Room: SLASH as soon as the Dragon's head appears - not before. Don't be tricked by the Cauldron boiling over.

Whirlpool And Rapids: again - the other way around.

Cauldron: Again as before, 1 move only - SLASH when the Dragon's head appears.

Disk 4

● As on other disks, the order may change.

Bowling Alley: Don't do anything until Dirk has appeared at the far end AND then jumped into the alley AND the red ball has passed him. Then, AS SOON as the red ball passes Dirk, jump DOWN towards yourself. Then DOWN again as each coloured ball passes - 6 down moves altogether.

Electric floors: Very tricky - concentrate! If the Knight on the far end has his sword on the RIGHT, you start LEFT (and vice versa.)

Your first move is made when the Knight's sword strikes the ground. The next moves MUST all be made WHILE DIRK IS JUMPING the previous move. The moves are (if sword is on the right):

LEFT, RIGHT, UP, LEFT, RIGHT, LEFT, RIGHT, SLASH. Hold the SLASH until DIRK lands at the feet of the Black Knight.

Phew! That should give you something to work on ... keep on practising, and stay tuned for our thrilling conclusion next month.

Nicholas Prokop, of Berkeley Vale NSW, sent the following Amiga tips.

Space Harrier

● Enter RAF on the high score table in the second last position on the table (so your previous score has to be second last). You will now have unlimited lives when you start the game.

Sword of Sodan

● Once loaded, select the Hero, then lose all lives on the first screen. Now select the Heroine, and you should have infinite players. Also, if you type RAD in the high score table and play another game you will have infinite lives.

Eliminator

● Here are the access codes to get you to level 14.

2. AMOEBA
3. BLOOP
4. CHEEKI
5. DOINOK
6. ENIGMA
7. FLITME
8. GEEGEE
9. HANDLE
10. ICICLE
11. JAMMIN
12. KIKONG
13. LAPDOG
14. MIKADO ❑

Commodore 64 hints and tips

Nick Van Heeswyck of Mount Gambier, S.A., sent us the following tips.

Giana Sisters

● Hold down the A R M and N keys to advance a level.

Thing Bounces Back

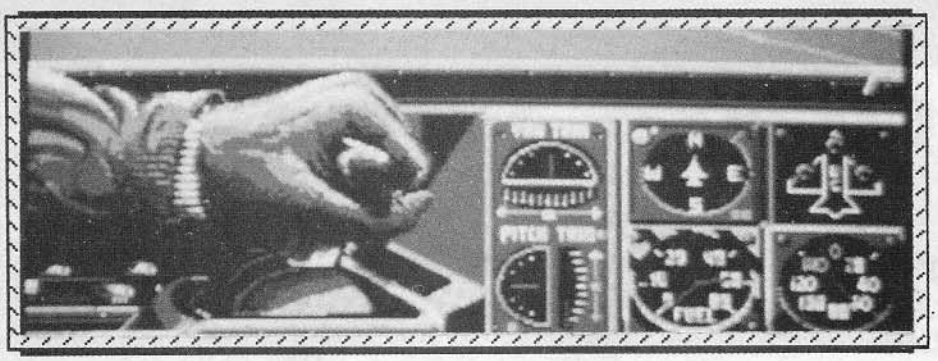
● On the title screen, type Y J O M H for infinite lives.

Lazy Jones

● Reset after loading, then enter POKE 4063, 173 followed by SYS 2061 to restart with infinite lives.

Traz

● Reset, then POKE 42200, 173 and SYS 327687 - you will now have infinite balls.



Paul Millward, from Salisbury North, S.A., contributed the following goodies.

Thunder Blade

● Load and reset, then POKE 4159 with a value between 3 and 255 for the number of lives you want - eg. POKE 4159, 100 will give you 100 lives. Then SYS 4096 to restart the game.

Pacmania

● Load and reset, then POKE 28520, 165 for infinite lives. SYS 14336 to resume.

Operation Wolf

● Do all the usual stuff, then POKE 33351, 165 for infinite energy. Restart with SYS 16963.

Paul is also something of an expert at Microprose *Pirates*. Write to him at 19 Redlynch Rod, Salisbury North, S.A. 5108 enclosing a stamped self-addressed envelope if you have any problems. ❑

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SHADOW OF THE BEAST

*Can it be that Psygnosis have got it right at last? **Stuart Kennedy** reports on the latest from the software house famous for dazzling looking games that have never quite made it to the top. **Shadow of the Beast** may be what we've all been waiting for ...*

SOMEONE OUGHT TO invent a virus that melts Commodore 64s. The little 6502 box has been the games machine standard for way too long. Many games are written to the capabilities of the 64's VIC 11 chip and then uploaded to the 16 bit world with the just the odd bell and whistle thrown in.

The result is software stagnation. Despite years in the marketplace, 16 bit graphics hot rods such as the Amiga are still being driven by programmers like Morris 1100s on the way to Tuesday bowls.

Fortunately there are exceptions. At Psygnosis they like to push it. The first game I played from this English programming shop was the classic *Obliterator*. I never made it right through the spaceship but I remember the classy soundtrack and graphics and knockout intro which had me reaching for the Raybans as the spaceman shot plasma bolts into the screen. The bummer was the scrolling and slowish gamespeed.

Enter Psygnosis' *Shadow of the Beast*, 3.5 megabytes of code worthy of being called a true 16 bit game. *Beast* was written over nine months by Martin Edmondson and Paul Howarth, two young Englishmen who say their only interests are programming, money and fast cars.

Beast pushes the Amiga's graphic and sound circuitry. For a start it's a big game packing 2.2 megabytes of graphics data and 850 kilobytes of music and sound compressed over two disks. The game will run on a 512K one disk Amiga through a two disk boot and lots of disk access as you manoeuvre through the game's world.

The atmospheric blurb in the game manual goes something like this. Evil Beast Mages stole you as a child. Things were done to your body including force feeding with anabolic steroids and radical skull and thoracic surgery. Your mother no longer knows you after the addition of horns and giant dentures and the insertion of a second heart. Worst of all you are forced to wear a cute little blue skirt which clashes with your bright red eyes.

You serve the Beast faithfully as a warrior messenger until one day you discover the truth about your past. Wild with rage you decide to play some square up. To get at the Beast involves penetrating a world loaded with 350 screens full of 132 different monsters and numerous traps, potions and artifacts. There are plenty of opportunities for revenge along the way and thousands of ways to die ...

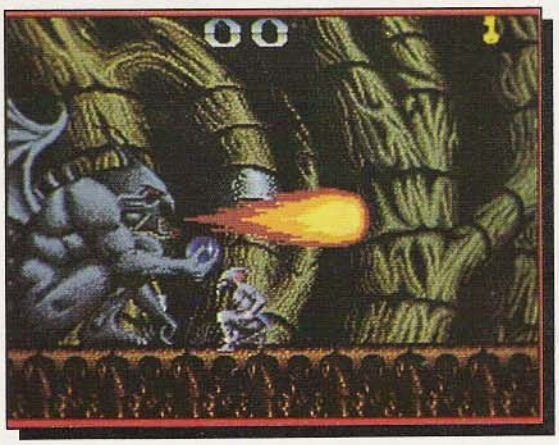
Beast combines horizontal scroll with platform sections. The game opens in a horizontal scroll landscape - along the way are entrances to a platform world underneath.

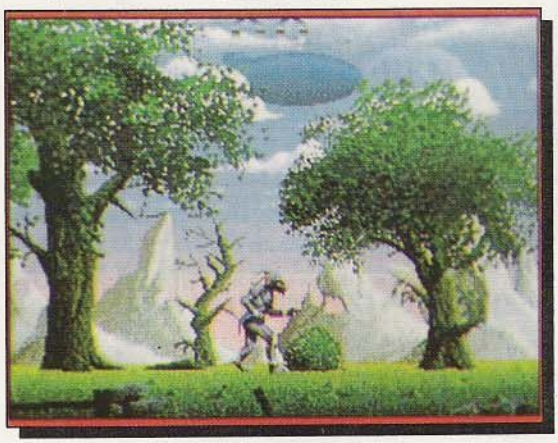
Moving the Beast character is by joystick control. He can run left or right, climb up or down, jump, punch and kick. Every encounter with a monster or trap increases the rate of his two hearts which is measured by an on-screen cardiogram - when strength drops to zero the heartbeat goes unstable and the hearts burst. Not surprisingly, death ensues.

What makes *Beast* different from a thousand other scrollers is its super smooth parallax scrolling. Screen update is at an arcade quality 50 times a second and the parallax scrolling gives the illusion of three dimensions by moving foreground sections of a screen faster than the background. There are up to 13 different levels of scrolling for some scenes and the artwork is beautiful - by using sprites rather than the blitter the programmers have managed to cram up to 128 colours on screen for some scenes. The synthesiser soundtrack is very good and adds to the atmosphere.

I enjoyed *Beast*. My only gripes are the long winded restarts after each demise and not being able to get anywhere near the Beast's lair despite a weekend of gameplay. At $79.95 including a Roger Dean tee-shirt I would welcome *Beast* into my Christmas stocking. ❑

Distributed by Mindscape
(02) 899 2277.
RRP Amiga $79.95.





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Shinobi

*Stuart Kennedy analyses **Shinobi**, a "pixel-for-pixel" imitation of your favourite arcade beat-'em-up. This is what he discovers ...*

ONE HOT SUMMER'S day, everything began to go wrong. As the most famous graduate of a secret oriental Ninja school, you had been invited back to the annual graduation ceremony and prize giving. Having enthralled the junior classes at the assembly with your tales of international ninjing, you were just about to move on to handing out the prizes to the seniors when there was a flash of Dark Ninja Magic and Bwah Foo made an unscheduled appearance ...

This is the introduction to *Shinobi*, a licensed knock-off of the Sega arcade game of the same name. I always read the atmosphere blurb on game instructions for three reasons - to see whether the story line bears any relation the actual game, to find clues and to be amazed at the warped and twisted imaginations of games programmers.

Shinobi is a shuriken-em-up which just about copies the arcade original pixel for pixel. However, several lines of corruption must accidentally have crept into the scrolling routines during the port because the Amiga version shakes, rattles and rolls a lot more than I remember the original coin sucker doing. Ahh well, at least this *Shinobi* only requires one up-front payment.

For those who haven't lost a few shekels playing *Shinobi* down at the local amusement arcade the gameplay goes like this. Your character Joe Musashi must complete a number of missions, penetrating deeper and deeper into the world of the Dark Ninjas who have kidnapped the entire junior class of your ninja school.

Along the way to a final confrontation with Bwah Foo, boss of the Dark Ninjas, Musashi must fight through a variety of ever more hostile urban landscapes. Completing a stage calls for rescuing the required number of baby ninjas and staying alive. At the end of every mission is an ever more difficult encounter with the dreaded Boss ninja. The clue here is that the well armored Boss ninja does not like copping a shuriken in the eye ...

Each stage has a time limit with bonus points earned for fast ninjas and death for slow ones. Joe can jump, turn, and chuck shurikens with more powerful weapons coming his way the more child ninjas rescued. Hitting the spacebar activates the once-per-stage Ninja magic which obliterates everything on the screen.

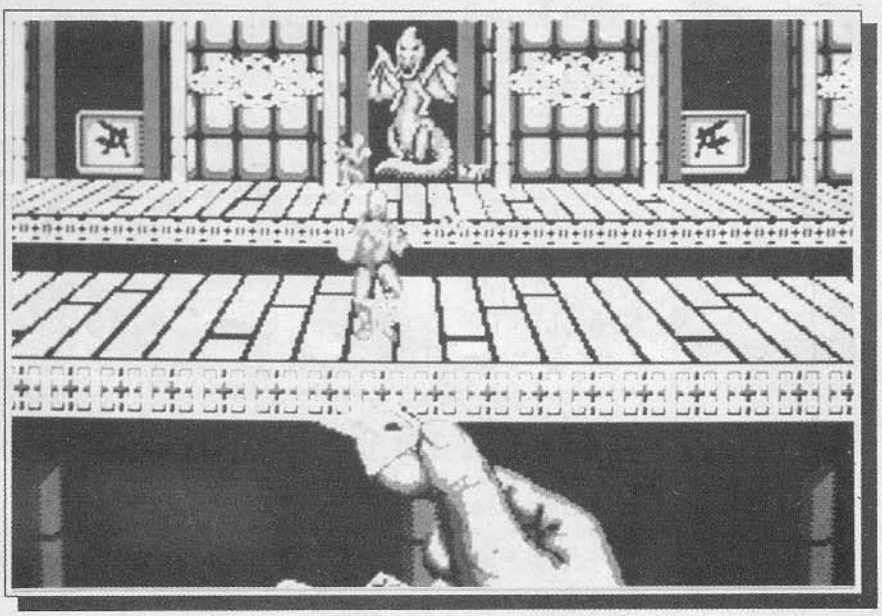
Clearing most stages involves wiping out the bad guys on the street and on the roof tops. The tricky part is level jumping between the street to the rooftops. The instructions say it is a matter of firing once then holding the fire button down and cycling the joystick up and down. I did this and had Joe bouncing crazily around the screen for half an hour while I ground down several good teeth in frustration. The trick is to just hold the fire button down and waggle the stick up and down until Joe complies.

After the ravages of a complete mission there is sometimes a bonus stage where points can be earned for shurikening a line of ninjas like ducks at a shooting gallery.

Like the arcade game, the Amiga version of *Shinobi* will allow you to hop back into a game at the level you died. Each time the game starts you are issued with three credits - hitting the fire button before a time limit expires uses a credit and puts you back where you lucked out. Being something of a joystick klutz, this saved me from putting my fist through the monitor on several occasions.

Shinobi appears to be an accurate copy of the arcade original although I was not prepared to invest a night out and pocketful of cash in a thorough investigation. My bitch with the game is that like many others of the arcade knock-off genre it seems to have been written to the Commodore 64 hardware standard and then jumped up to 16 bit land. Compared to something like *Shadow of the Beast*, Shinobi's graphics, scrolling and sound are very ordinary.

Despite being dull on the eyes, *Shinobi* is interesting enough to liven up a wet Sunday afternoon and could save a fortune in twenty cent pieces. Although at a break even of 137 40 cent games it would pay to work out how badly you need to crack this arcade classic. ❑



Review copy from Mindscape
(02) 899 2277.
RRP Amiga $54.95.
C64 disk $49.95, cass $29.95.

Rainbow Warrior

Redneck Phil Campbell checks out the first Greenie game ever.

YOU CAN PICK the fair dinkum Greenie literature these days by its distinctive brownish tint. Unbleached paper. As we all know, white paper is ideologically unsound. It has been treated with dioxins or hydrofluorocarbons or organochlorides or something else with a very long name. Even your toilet paper now arrives in a tasteful beige.

The manual packaged with *Rainbow Warrior* is slightly beige too. After all, this is the first ever environmentally friendly computer game. Released by Microprose and endorsed by Greenpeace, *Rainbow Warrior* takes you for a ride on the ecological bandwagon. Hold on to your hats.

The game has already caused something of a stir in the UK, where one Tory politician has branded it "socially irresponsible" - after all, most of the actions of the original Greenpeace protesters involved at least some level of illegality or civil disobedience. Implying, of course, that it is more socially responsible to simply sit back and watch while factories pump radioactive waste into the sea.

The men from Microprose have certainly got no qualms about the morality of their game. According to one spokesman, *Rainbow Warrior* is the first of a new breed of computer games. "It's just one of the many areas that computer games have never really explored. We're taking the issue of world conservation very seriously - and we think it's possible for computer games to express important issues very powerfully, and in an exciting and action-oriented way."

Possible perhaps. But does *Rainbow Warrior* succeed? Let's have a look.

The title screen displays a menu, with seven activities to choose from. You can block ocean pipelines as they spurt out polluting waste, you can stop ships dumping radioactive drums, you can prevent seal culling and illegal whaling, or you can tackle the problems of acid rain and ozone depletion. All in a day's work for the average member of Greenpeace. You must complete all these missions to qualify for the final challenge - "create a picture of a pollution free world and thus free the spirit of the Rainbow Warrior." Sounds weird, but unfortunately I didn't get far enough to check it out.

All the *Rainbow Warrior* sub-games are non-violent - a change from the usual "blast everything to bits" scenario.

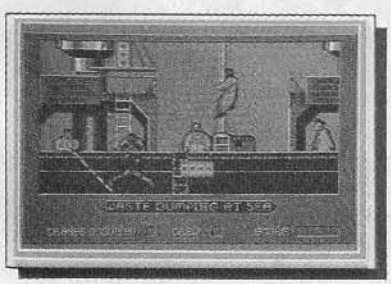
The Ocean Dumping game, for example, is based loosely on *Donkey Kong*, the standard platform and ladder hopping favourite. Climb onto a ship from your dinghy, race up a series of ladders and occupy the cranes to stop them dropping drums of radioactive waste into the sea. This is far from easy. Sailors pelt you with rubbish while you climb, and you always need to keep an eye out for falling drums.

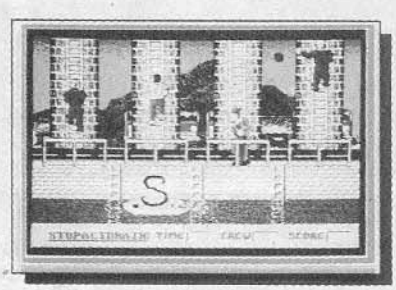
The Seal Culling game is challenging too - running around an arctic landscape dodging hunters while you try to spray the friendly seals with green dye. This makes their fur worthless, saving them from the cruel hunters, who are trying to make their fur go red instead. This game is fun, though rather difficult.

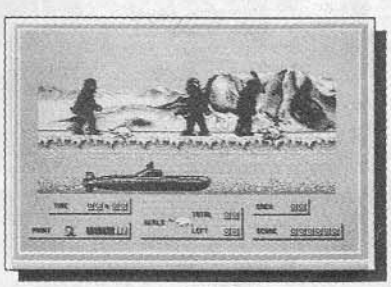
The other games on the *Rainbow Warrior* disk are of a similar standard. Some are quite imaginative, like the Whaling game - in this one, you control a whale moving along the bottom of the screen. By bouncing water balls around the screen, sections of a large picture are uncovered. Whaling ships fire harpoons at you, and other nasties do their best to wipe out your picture. This game is unique; I've never seen anything like it before. It is also extremely frustrating, so I never want to see anything like it again either.

The *Rainbow Warrior* collection is certainly unusual. Graphics are generally good, with moments of sheer excellence. Sound effects on my Commodore 64 ranged from average to annoying - I turned down the volume. As software designed both to entertain and inform, it should probably be judged a success. The off-white manual is packed full of detail, and the game raises important issues. ❑

Review copy from Questor (02) 662 7944. RRP C64, $39.95, Amiga, $59.95.







Fun in the Amiga Public domain

by Phil Campbell

John Noble, of Normanhurst NSW asked for more reviews of the best Public Domain Games. How's this for service?

LET'S CALL A SPADE a spade. Computer games can be downright expensive.

Top class Amiga games can sell for up to $70.00, which puts quite a hole in the average family budget. Little wonder, then, that software piracy is so popular. Expensive programs can be copied quickly and easily at the cost of a single blank disk. Making these "pirate copies" is much cheaper than buying the product - but the fact is, piracy is illegal.

Before you set out on your life of crime, it may be worth taking a quick look at the ever growing collection of Public Domain software. These programs are "copyright free," written by authors who want fame more than fortune, and circulated around the world by an amazing network of informal contacts.

The vast bulk of Amiga Public Domain software falls into the "semi-useful" category - programming utilities and the like. Some is very high tech. Some is rubbish. And among it all, scattered far and wide, you will even find some pretty decent games.

The problem, of course, is sifting through the garbage to find the gems.

Fortunately, this is not as hard as it seems. Tim Strachan, from Megadisc Digital Publishing, has taken the time to collate a ten disk set of the best Amiga Public Domain games. Each disk is crammed with goodies - though, to be honest, some of the goodies are not all that good.

There are numerous attempts at *Reversi* (otherwise known as *Othello*), there are computer conversions of old pencil and paper favourites like *Battleships*. There is even a not-quite-finished shoot-'em-up called *Revenge of Doom*. And that is just scratching the surface.

Tetrix, on Disk 10, is my favourite - the best game in the whole collection. In practical terms, this is an exact copy of *Tetris*, a game originally developed in Russia and released commercially last year.

Gameplay is identical, although you must use the keyboard rather than a joystick. Your task is simply to pack a rectangular box with blocks that fall from the top of the screen. The blocks come in a variety of shapes and sizes - "L" shaped, "T" shaped, rectangular, and square. As they fall, the trick is to rotate them and move them left and right so they completely fill each row. As a row is completed it disappears - if you leave any gaps, the row remains, and your stack grows closer and closer to the top of the box.

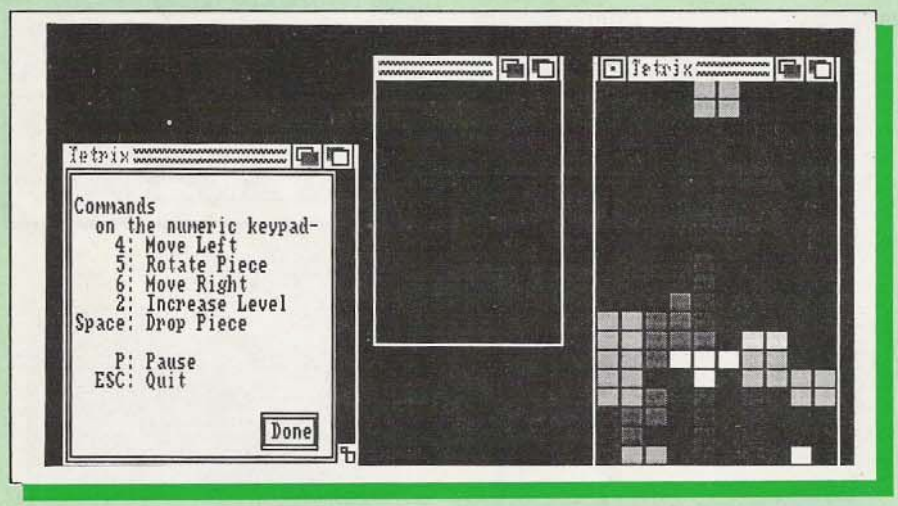
The game ends when you run out of room. That's all there is to it. Simple in theory - frustrating in practice. I managed to complete 60 rows. One of my friends has reached 90. I will keep practising, because *Tetrix* is simply addictive.

The commercial version of the game was much prettier - there were nice pictures in the background, and there was a mist of swirling, sparkling gold particles in the middle of the playing area. The public domain version, on the other hand, is as plain as a No-Frills chocolate wrapper. There are no enhancements at all. And it makes no difference. The game is every bit as exciting as the original, and if anything, a bit easier on the eyes.

Best of all, *Tetrix* - like many games in the collection - is designed to make use of the Amiga's multi-tasking capability. The game can run happily in the background while you do something more useful - simply pull down the window when you need a little relaxation.

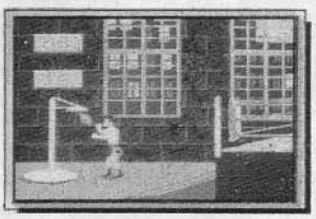
I like *Tetrix* a lot. My fellow *AC & AR* game reviewer Luke Tattersall is seriously hooked too - Luke has made it to level 100, and is keen to hear from anyone who can beat his score.

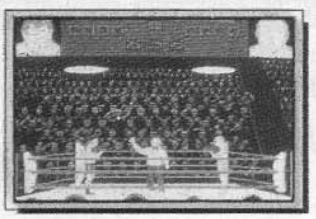
The ten disk Amiga Public Domain game collection is available from Megadisc (ph 02 959 3692) at just $55.00, or individual disks can be ordered at $5.50 each. My advice? Buy the set - even if you play each game just once, there is enough here to keep you amused for hours. ❑



Tetrix

THE CHAMP





*Feel like a fight? **Phil Campbell** finds that **The Champ** is a real knockout ...*

THERE ARE SOME things I will not do at any price. Like getting in a boxing ring with Jeff Fenech. Not even for all the money in the world. I am allergic to pain. Besides, I am keen to keep my brains intact - Mohammed Ali might still have a beautiful face, but he's certainly shaken a few ROM chips loose somewhere.

Vicarious pugilism is much more appealing. All the thrills, and none of the pain. I have just gone a couple of rounds in the electronic ring, and I'm not even punch-drunk. I'm playing *The Champ*, a neat new Amiga game from Pactronics.

If first impressions count for anything, this game is a winner. The opening sequence is absolutely dazzling. The screen display is richly detailed, and the sound effects are rivetting. A digitally recorded voice rises over the chanting of a huge crowd - "Ladeez and Gentlemen . . . Welcome. Tonight we present to you . . . *The Champ*." The theme from *Rocky*, fully orchestrated, swells in the background, as a huge boxing glove moves across the screen.

Great stuff. An introduction like this cannot fail to put you in the mood for some serious boxing.

Suddenly, though, the scene changes as the game begins. Gone are the huge crowds. Gone are the adoring fans. You are left standing in a desolate back alley, face to face with the neighbourhood strong man. After all, you didn't think you could start at the top, did you? First you have to establish a reputation. Win this bout, then move on to the gymnasium for some serious training. Then you will have the chance to try out for your first professional bout.

The Champ fits easily into the well-worn beat-'em-up genre of computer games - waggle your joystick in different directions to move, hit or defend yourself. There are 16 possible positions, and if you intend to do well, you should learn them all. I could remember just three punches - an effective straight left, a right hook, and the uppercut "killer". I used them when I needed them, and improvised with the rest.

My alleyway opponent, to be honest, was a pushover. He was sluggish, he had poor footwork, and he was a slow learner. My uppercut floored him every time. A little training in the gym polished up my skills - skipping requires good joystick co-ordination, the sandsack will test your punching combinations, and the punchbag will help you improve your speed.

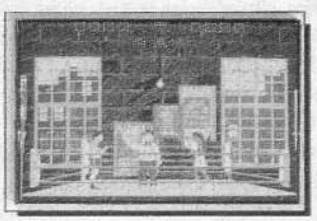
At last. My first crack at the big time. Three names appear on the screen - world ranked boxers, who I am now elegible to challenge. I nominate George Brown. George refuses my offer. Ray Waters is not so rude. He accepts, and the fight is on.

This time, we have a referee, complete with clearly digitised instructions. "Box," says the ref - and the fight is on. We exchange a few quick blows, then move into a clinch. "Break," yells the referee, but not before my opponent has scored 50 points with well timed punches to my body. Ouch.

The fight continues. Waters is leading on points, but I finally bring out my secret weapon - the uppercut. He falls to the floor, out for the count. Success. I am-well on the way to my World Championship.

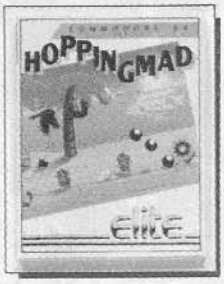
The Champ has a lot to offer. Graphics are clear and detailed, animation is smooth and convincing, and the sound effects are both useful and atmospheric. As a sporting simulation, the game also rated well. There are plenty of punches and movements to master, and variables like "Morale" and "Condition" that add to the feeling of realism.

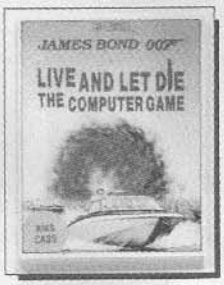
Best of all, there is a two player mode. Now here's an idea - buy a copy of *The Champ* for your kids. Next time young Johnny feels like thrashing it out with his little brother, give them each a joystick, and sit them down in front of the computer. At last - a game that's actually useful! ❑



Review copy from Pactronics (02) 748 4700. RRP Amiga $59.95. C64 version available soon.

The Story So Far





***Tony Smith** dusts off his Commodore 64 to check out a collection of classics with a nostalgic title.*

WITH THE CURRENT resurgence of the Commodore 64, the arrival of a three-tape pack named *The Story So Far Volume 2* started a whole new chapter of computing in my home. First I pinched the 64 from its place in my son's bedroom and attached it to my 1084S monitor, leaving the Amiga RGB cable in place. To my surprise and delight, when both computers are sitting side by side and running, a simple press of the RGB/CVBS button brings either the 64 or the Amiga instantly to view. It has been a long time since I had loaded any tape-based software, so I prepared for a long wait.

Not so, for although the loading of tapes takes time, it gave me a chance to reflect on the good old days when I had only tapes, and where I am now. While I am loading the 64 tapes, I can download files, edit disks, play Amiga games, write reviews, watch demos, and even listen to hi-fi quality music. We've come a long way, folks.

A quick press of the switch and presto, *Overlander* has loaded. The first game of five, *Overlander* is a driving game with good sound effects and thanks to the 1084S monitor, excellent graphics. You must choose between doing 'runs' for the good guys, or running pirate software for the crimelords for bigger rewards. Crime does not pay - or does it?

The more rewards you collect, the better equipped your car will be. Accessories include turbos, armour, flamethrowers, wheelknives, rockets and more. Scenery zooms by realistically and hazards abound. There are four types of outcasts - crawlers, roadhogs, kamikazes and off-roaders. Each enemy has different methods of attack and strength, the higher levels requiring extensive blasting for kills.

A good start for the package, *Overlander* will keep the trigger-happy driving freak glued to the screen for ages.

Next game to load was the other side of tape one, this time it was an old favourite, *Hoppin' Mad* a jolly game where you are a string of globes, bouncing your merry way to the seaside. On the way you are assailed by various foes, hedgehogs, frogs, rooks, bees, carnivorous plants, cacti and lizards. Catch ten balloons and you can float to the next level, collect the bonus objects for high scores - a simple yet infuriating game which offers plenty of challenge without being too easy.

Following *Hoppin' Mad* comes a classic platform game, *Beyond the Ice Palace.* Set in times of magic and goblins, this quest is to banish evil from the land of the good - now where have I heard that before?

Nasty critters come from all directions, draining your precious power and ending your lives - six lives are given and all of them are needed. In times of need, spirits can be called upon to help you out, but only two are available in the early stages of this epic.

This game will satisfy the sword-wavers and explorers with lots of fights and many screens-worth of scenery to search.

James Bond is the hero of game four, *Live and Let Die.* Unfortunately, this would be one of the weaker points of the package. Although the theme is fairly good, with a speedboat being the vehicle, the ultimate result is not the greatest with blocky graphics and jerky movement spoiling the whole image.

Heroin dealers are the target of your mission with several levels of defence needing to be breached. If you can stand the graphics, the game itself is not too bad with different coloured targets requiring different weapons and evasions. Dark tunnels must be traversed, fuel and snuff bombs collected, locked gates blown open and finally, by jumping off a log and skillfully sending a snuff bomb, the factory can be destroyed. Good luck - if you persevere with this game, you will probably enjoy it.

Last but not least comes *Space Harrier,* pitching you against the evil aliens who have taken over Dragon land. Scrolling into the screen, the aliens come from the sides and grow alarmingly as they near you. Blasting and more blasting is the name of the game as you near the guardian of the level, a huge snake-thing thrashing all over the screen, seeming to absorb most of your shots. This game was ahead of its time when first released for the C64 and is still good enough to keep you shooting for ages.

The Story So Far Volume 2 is a fine collection of games, with enough to satisfy the shoot/strategy/sim fans. Tape loading is a little slow but if you are a tape user this won't worry you. *The Story So Far* is good value for money. Just the thing to drop into the keen young Commodore fan's Christmas stocking. ❑

Available from Questor
(02) 662 7944.
RRP C64 disk $39.95,
cassette $39.95.

Licence to Kill

Cadet computer journalist ***Aaron Richardson*** *tries his hand at the latest in Bondage ... it's the game based on the movie based ever so loosely on the book.*

"THE NAME'S BOND ... JAMES BOND." Yes, he's back. Code name 007 takes to the small screen in a thrilling adaption from the new movie *Licence To Kill*. If you've ever wanted to play the part of the world's best kept secret agent then this game is for you.

Domark's previous James Bond licences have always been a tad disappointing, but this time they have come up with some thing a bit more substantial. James is up against the drug-smuggling forces of Sanchez, armed only with his hand gun and whatever gadgets Q has given him.

Licence To Kill is a multi-level, multi-role game. 007 takes the controls of helicopters, boats and tankers, performs death defying parachute stunts and even takes to the sea for a spot of barefoot waterskiing.

Play starts in a helicopter armed with only one single shot cannon. Your task is to fly 007 to his drop point, and you have four lives to do it in. Sounds easy? Maybe it would be if there weren't gun emplacements continuously firing at you, buildings and trees to dodge and a small jeep harassing you through the level.

After completing the first level on your fifth or sixth attempt the helicopter exits leaving poor old 007 (who actually gets younger every movie) to slug it out with 20 or 30 trigger happy thugs. These baddies actually have brains! They retreat and seek cover when they're getting beaten, which makes them very hard to kill.

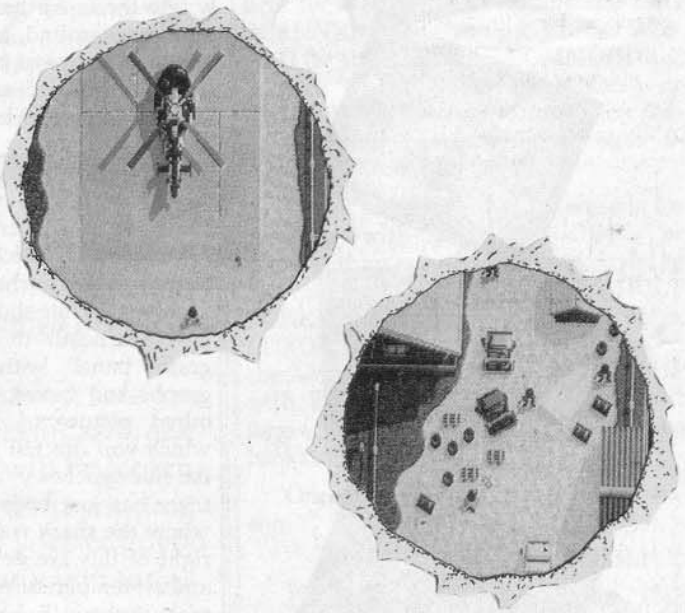
You start the level armed with your faithful 15 shot Beretta hand gun and two clips. With attackers on all sides you will tend to spray bullets everywhere trying to wipe them out. Don't panic! Carefully aimed shots are a must to conserve ammunition, and they bring better results too. Slow and steady is the only way to go - heroic Rambo-style moves are certain to end in tragedy.

Bond can be hit four times - the fifth shot is lights out and back to the start of the level. It seems to take for ever to get through this level but when you do its back to the skies again in another nail biting battle.

This time James is lowered by rope from the helicopter as Sanchez attempts to escape to Cuba in his aircraft. This is tricky ... you must guide 007 onto the back of the dodging plane so he can attach a tow rope. Position him directly over the tail of the plane and press the fire button to "lock-on"- not as easy as it sounds.

Licence To Kill will give you hours of enjoyment. The game is challenging - I've only told you about the first three levels, and there are plenty more. Graphics are good, with large sprites and a lot of variety. It should be a success with game lovers everywhere. *Licence To Kill* has now been released on all formats.

Review copy from Jannelle Skipper, Wills, Tasmania. Ph 003 315 688. Fax 003 315 868. ❑



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RRP Amiga $49.95, C64 disk + cassette $29.95.

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JAWS

Remember the summer of '75, when you were afraid to go in the water? You read the book, you saw the movie, you bought the tee-shirt. Now nearly fifteen years later, just when you thought you were safe from Fishy commercialism, that great gaping mouth is back in ***Jaws****, the computer game!* ***Greg Munro*** *reports.*

YOU ARE LOOKING at a dark, sinister ocean. A shadowy ripple, just recognizable as a dorsal fin, slices silently through the water and disappears. Seconds later a girl appears, kicking and splashing in an awkward Australian crawl. As she reaches centre screen, the picture pans to keep her there. Then suddenly and silently a great conical head strikes her from below, "jaws snapping shut around her torso, crushing bones and flesh and organs into a jelly." Her last lingering scream fades to silence.

You guessed it folks. *Jaws*, the movie sensation of the 70s, has come back to haunt us. The opening of the game is impressive - a clever ray-traced animation of a bathyscaphe being lifted onto a boat accompanied by the da-dumm da-dumm of the famous *Jaws* theme music.

Then, it's into the game itself. The opening game screen is divided vertically into three. At the top, set on a woodgrain background, are the score, an outline of the gun and bullets you must find to kill the shark, and an indication of how much air and how many divers you have.

Next, in the middle, is a picture of your cabin cruiser, with the diving sphere on it, powering through a shimmering ocean. Occasionally a flock of birds will fly overhead, or the dorsal fin of a Great White slide silently by.

Underneath this is another woodgrain panel with various pictures, graphs and boxes. First is a small coloured picture of Amity Island, from which you can tell at a glance which of the five beaches you have closed, where there has just been a shark attack, and where the shark was last sighted. To the right of this are devices showing water and air temperature; time elapsed; swimmers (when 15 have been eaten, you lose!); messages; and a picture of the current diver (Brodie, Quint, Hooper, and three others).

There is also a gauge called the Mayorometer, which ranges from OK through So-So to FIRED. If you keep too many beaches closed for too long the island's economy will suffer and Mayor Vaughan will sack you!

Pulling back on the joystick gives a full screen map of the island, with which you may choose where to position your boat and which beaches to close. Pushing forward on the stick returns you to the main screen. Click the fire button, and the Bathyscaphe is lowered, transferring you to the undersea screen. You may toggle between surface and underwater scenes using the space bar.

As soon as you hit the water, a steady rhythmic breathing starts, sounding exactly like a real scuba dive! After a while it really gets on your nerves.

The water is shallow, barely covering a reef populated by many deadly sea creatures, which collide with you or shoot at you, or both. Beneath this reef is a vast labyrinth of undersea caves, into which your intrepid divers must venture. The equipment needed to kill Jaws was lost there when the transporter vehicle sank. So far I've only been able to find one of the four pieces of the gun before all six divers expire.

There are two types of sea creatures. Flashing ones can only be shot with "Mega Bullets", which can be found by shooting normal sea creatures. Other icons also appear, representing treasure, extra air, fast bullets, and so on. I've never managed to find any extra air, and often end up staring at a graphic of a rather distressed looking diver with the cheery message "You have suffocated!"

Jaws is almost worth playing just for the several different and interesting ways to lose! So far I haven't found any way to win, but the challenge is there - how can I let myself be beaten by a fish?! ❑

Distributed by Mindscape
(02) 899 2277.
RRP Amiga $49.95, C64
disk $39.95, cass $29.95.

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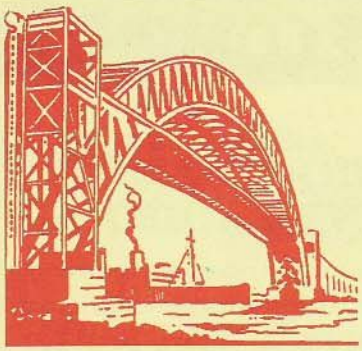

Adventurer's Realm

by Micheal Spiteri

WELCOME TO THE Christmas edition of Adventurers' Realm - the only adventure column in Australia dedicated to adventurers on all Commodore computers. If you are stuck in any game, write to the Realm. If I cannot help you out with the hundreds of hints in stock, then I'll print your problem on these pages for somebody else to ponder upon. If it's general hints you are after, ask for some of the Realm's free hint sheets - available for most of the popular games on the market. The address to write to is:

Adventurers Realm 1/10 Rhoden Court North Dandenong Vic 3175

If wargames are your problem then write to Barry Bolitho at the above address, and he will try to help you out.

Finally, Kamikaze Andy is on hand to help you out with all your roleplaying queries. His address is:

The Dungeon 44 Hawkesbury Drive, Willeton WA 6155

Important Note when writing to the Realm. Always enclose a stamp addressed envelope, otherwise the chances of a reply are next to none! ❑

Free hint sheets

● The following hint sheets are available from 1/10 Rhoden Court. Maximum 4 per person:

- Bards Tale 1,2,3
- Zork 1,2,3
- Hitchhikers Guide
- Hampstead
- Hobbit
- Castle of Terror
- NeverEndingStory 1
- Adventureland
- Borrowed Time
- The Pawn
- Pirate Adventure
- Deja Vu
- Dracula 1,2,3.

Red alert: The Realm has run out of *Faery Tale* hint sheets! If some kind adventurer could send me a copy, it would be most appreciated! ❑

Realms chit chat

● Peter Gerdsen, teacher at Wangaratta Primary School, writes: "Some children in my class were meant to write this before the holidays began but ran out of time with Education Week and end of term activities. I have been letting them use *Uninvited* before and after school but the groups working on the puzzle have come to some dead ends and I suggested writing for help as a way out rather than giving up.

"We have three Amigas in our classroom which are used for word processing, *DeluxePaint III* and *Fantavision*. Children are being encouraged to present some of their writing as an animation to show it is just another form of publishing a finished piece.

"Adventure games have a place in the classroom because of the strategies involved together with the planning and recording (mazes, levels etc). As a school we have to consider the suitability of the content carefully before kids can be set loose with the program. Can you recommend some adventures high in the application of strategies and low in aggression?"

MS: There are quite a few products available on the Amiga that are suitable for use in the classroom. One you must get hold of is Where in the World is Carmen Sandiego, a fun geography mystery adventure. (from Dataflow) Then there is the Three Stooges by Cinemaware. (from Mindscape) You mentioned Uninvited, well what about Deja Vu by the same makers, and also the French game Mortville Manor (from Pactronics). The Zork series by Infocom should also be looked at. I'd be interested to hear from other teachers and parents on this matter, since computers are now a major part of a child's education.

Meanwhile, Glenn Holland of Glebe wrote to be me enquiring about a game called The Great Cave (or something similar). He played this game a few years ago on an Apple IIe in Los Angeles, but is having trouble tracing the game down in Australia. From the description Glenn gave me, it sounds like a variation on the original mammoth game simply called Adventure (which spawned many duplicates, including Zork, Colossal Cave, Adventureland etc). If anybody knows about The Great Cave, please please write to the Realm.

The Questor Adventurer of the Month

● Long overdue, each month the Realm will now be giving a free game to the person who supplies the most helpful collection of hints and tips. The game is kindly supplied free of charge by those guys n' gals at Questor, distributors of high quality software. This month's winner is P. Georges of St. Clair.in NSW, who sent in a complete disk full of hints and tips (from A to Z), collected up over the last five years. Mr Georges wins *Sleeping Gods Lie* for the Amiga, RRP $69.95, from Questor. Also worth a mention is Tony Lundberg, who sent in some other handy hint sheets. ❑

Problems, Problems, and more Problems

(or the Troubled Adventurers Dept)

● Would you believe, as the year draws to a close, scores of people are stuck in dungeons, caves, and other mysterious places. And I thought this was supposed to be the festive season.

Game: Spellbreaker
Victim: Michael Lee
Problem: What use is the Lara Fragment?

Game: Frankenstein
Victim: Mitchell Raskbrook, Heathbridge WA.
Problem: Is there a key for the chest in the garden? If so, where and how can I find it? How can I find the ice pick and escape from the ice tunnels?

Game: Guild of Thieves
Victim: Urk McGurk, Parafield Gardens, SA.
Problem: How do I get the cube from the weighing machine?

Game: Beyond Zork
Victim: S.K.Pilley, Eastwood, NSW.
Problem: How do I get the giant onion from the inn to the idol in the jungle?

Game: Zak McKracken
Victim: (Could not decipher signature), St Maroubra, NSW. Problem: How do I open the panel in the room on Mars with the force field?

Game: Shadowgate
Victim: Risole
Problem: a) Where is the key for the door in the cave that the Gargoyles are guarding? **b)** How do you move the boulders that block the stairway in the cave with the waterfall at the beginning? **c)** How do you get to the doorways that are too high to reach? **d)** How do you get the platinum horn from the hell hound?

Game: Firelord
Victim: Joan Baldwin, Cooks Gap, NSW.
Problem: Cannot find the knights who give the weapons, or the princess.

Game: Shadowgate
Victim: Barbie Hitchemor, Ipswich, Qld.
Problem: In the Mirror Room, how do I unlock the steel door behind the broken mirror?

Game: Inside Outing
Victim: Rae Harris, Kingston Park, SA.
Problem: How does one mobilize the canaries (!?!). How does one mobilize the poison plants in the secret room?

Game: Kings Quest III
Victim: Lesley Robinsom, Williamstown, NSW.
Problem: Where or how do I get the cat hair?

Game: Emerald Isle
Victim: Val Brackett, Gladstone QLD.
Problem: How do I get to the north platform of the forest railway station? How do I stop the mine from caving in?

Game: Legend of the Sword
Victim: Ken Cras, Melba, ACT.
Problem: Once I have climbed the tree and searched the trolls, I cannot go back across the river!

Game: Deja Vu
Victim: Stuart Johnson, Mt Eliza, Vic.
Problem: How do you get rid of the gun? Does anybody know anything about a secret passage?

Game: Starglider II
Victim: Ben Kovalik, Carramar, NSW.
Problem: What is the purpose of the energy cube launcher? ❑

Help, Help, and More Help

(or the Smart Adventurers Dept)

● Lesley Robinson, who writes from the RAAF base in Williamstown, NSW, has offered help for the following adventurers:

Game: Uninvited
For: Christine Sullivan
Help: To pass the dogs just say Instantum Illuminaris Abraxas.

Game: King Quest I
For: Joel Williams
Help: You must find and fight the dragon.

Game: Arazoks Tomb
For: Severian
Help: To get past Zud you must use the sword that is in the other city.

Game: Police Quest
For: Rob Curtis
Help: You must call a taxi in your hotel room. Dial information (411) and ask for Lynton Cab Company.

Game: Guild of Thieves
For: Craig Blackberry
Help: To get the chalice from the bear you must catch a fish and then rub with poison then feed it to the bear.

Risole also comes out with hints and tips with help for David Marjanovic:

Game: Shadowgate
1) To get past the Gargoyles, get the scroll which has written on it Instantum Illuminaris. Open it and operate it on them. 2) To cross the Lava Pit, take the book on the table in the library, put the glasses on and read it. Operate this in the statue. 3) The key for the left hand door in the banquet hall also needs a scroll, this time the one marked Terra Terrak

Game: Uninvited
To get rid of the ghost in the kitchen, go to the storeroom which has the Spider Cider in it. Use it on the railing where the spider runs across. Go out of the room and go back. Take the spider and use it on the ghost. ❑

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Adventurers Realm - Games of the Year 1989

● The following games released this year get my vote for being of outstanding quality and good value for money....

Mortville Manor

(for the Amiga)
available from Pactronics

● This has to be one of the best adventure games released. Totally engrossing, great on atmosphere. This game set in France in a large manor during a cold winter, and gives you the role of a famous detective who received a plea for help from a childhood sweetheart. Many characters that literally speak to you in French accents, neat graphics and sound, and enough run-of-the-mill mystery adventure problems to keep you hooked until the wee hours. The format is similar to that of *Deja Vu* - only better.

Corruption

(for Amiga and C64) available from Questor

● Released early this year from the makers of *Pawn*, *Guild of Thieves*, and *Jinxter*, comes this thrilling original adventure. You have just become a partner in a broking firm, when things do not seem right. Yes folks, there is heaps of corruption taking place, and you've only just arrived!! Great parser and text, as well as very nice graphics. Not many locations to visit, but enough to keep you intruiged.

Fish

(for the Amiga and C64)
available from Questor

● From the makers of *Corruption* comes this totally original adventure that has been sweeping up awards everywhere. You play an inter-galactic agent who is currently having a holiday inside the body of a fish, when all of a sudden you are called upon to search for the devious Seven Deadly Fins - an inter-dimensional group of anarchists. Many places to visit, many problems to solve in this very humorous graphic adventure. Definitely a winner in the Realm.

Balance of Power - 1990 Edition

(for the Amiga & C64)
available from Mindscape

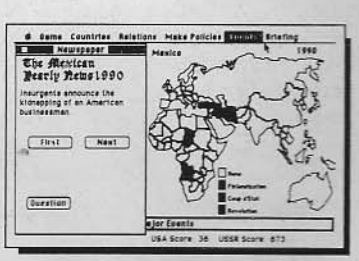
● This game deserves another mention. No doubt the best political strategy in the world, it gives you the role of one of the leaders of one of the super-powers as you start to change and make world events. First released a few years back, this latest version is fully up to date with good graphics and packed with features. I'm just amazed at how author Chris Crawford could fit so much information on a single floppy disk!

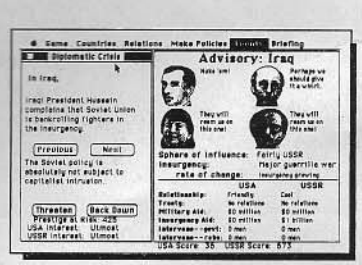
That's all for Adventurers Realm - 1989, I hope you all have a Merry Christmas and a very happy New Year, and I'll back back next month & year! So, until 1990 - so long!

Clever Contacts

● To start the new year rolling, a lot of people have written in asking for a clever contact list. If you'd like to be on this list, just send in the list of games you can help out in, with your name and address in clear letters. ❑

Corruption





Balance of Power - 1990

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